PAGE 1 OF 208

INSERVICE TESTING OF VALVES PROGRAM

TABLE OF CONTENTS

SECT	ION		PAGE
1.0	OBJS	CTIVES	2
2.0	REFE	RENCES	2
3.0	PRER	EQUISITES	4
4.0	PREC	AUTIONS	- 5
5.0	CHEC	KLIST(S)	5
6.0	6.1 6.2 6.3 6.4 6.5 6.6	EDURE Test Interval Pre-service Testing Valve Category Requirements Corrective Measures Exceptions Instrumentation Cetermination of Program Scope	5 5 5 6 7 17 18 19
7.0	RECO	RDS	21
ATTA	1 2 3 4 5 6	Inservice Valve Testing Table Information System Valve List: Unit 2 Unit 2 - Justification for Valves Not Tested Quarterly System Valve List: Unit 3 Unit 3 - Justification for Valves Not Tested Quarterly ASME XI Table IMV-3510-1 Valve Relief Requests	22 28 80 92 144 156 157
	8	Stroke Time Acceptance Criteria For Valves Required To Stroke At Other Than Their Safety Analysis Limits	205

9/12 00	C 4/7 SDMS NO
EFERENCE SO123-VI-10.1 TEMPORARY C	CHANGE NOTICE Page of
Suancie Date DEC 43 1991 Single Use TON Cance	Date DEC 2 3 1991
Copy forwarded to the Nuclear Safety Group PERFORMED EX	Date DEC 2 3 1991
TECHNICAL SPECIFICATION VIOLATION IF NOT COMPLETED WITHIN SITE DOCUMENT NO SOZ3-V-3 5	Revision No Single Use TON YES [] NO X
PREPARED BY: Dave Chians	89013 W23/91-0000 Sta Tech
H required, TCN Deviation Approval APPROVED BY: SIGNATU	INE IF BY TELECOMPRINT NAME AND BU STATE DATE TIME
Superseded/incorporated TCN(s)	tected Page(s) Attached (Not applicable for SINGLE USE TCNs
This change cannot wait until the next revision of the Site Docume	nt and is requirERELIVED COM
A To implement facility design change (PFC, NCR, TFM, et Facility design change identifier NONCATE FFC, NCR, TFM, ET	DEC 2 3 1991 /91000133 5 91080134
Implementation of the facility design change has been de	etermined. HE BOE COPY (If NO. a TCN cannot be approved until the facility design change has been implemented.
B Other (e.g., CAR, NRC Commitments) Specific Reason	
following valves: 2HV5803 and 2HV-	roke times to attachment 2 for the 1512; 2440515 is changed to
s the document being TCN'd QA Affecting? YES NO C This is indicated on the Table of Contents page of the late Document	(if YES, complete the boxes below.) (If NO, see * below.) nent if not indicated, treat as QA Affecting.)
A Does this change affect FSAR or Tech Spec commitments? B Does this change affect the nonradiological environment of any offsite area previous is the intent of the original document affered? D is the document to be changed an Emergency Operating instruction? E Does this change pose an unreviewed safety guestion per 10 CFR 50 59 is a does accident, create the possibility of a different accident, or reduce the Tech Spec may be considered to the Tech Spec may be con	#ES ☐ NO. #ES ☐ NO.
Surveillance testing? YES NO A II YES, Form EQ(123) 16 The entire document was reviewed in conjunction with this TON ar annual/biennial review disposition of Acceptable As Written-Exten	id (SO123-VI-1.0.2)
REVIEWED and APPROVED BY: CFDM OR DESIGNEE	A- 0418
For SPG Use Only:	
Is QA/QC Review/Approval Required? YES X NO* Note respond "If No, enter N/A on the Quality Assurance Review/Approval line PERFORMED BY: AFO 1. W.C.W.	
Signatures Required:	ORTE
INITIAL	APPROVAL/)
REVIEWED and APPROYED BY:" (at least one (1) 5HO on the unit affected)	108 6 12/ 200
Could this TCN affect or does it represent a change to a plant operation in progress? YES*** NO	Could this TCN affect or does it represent a change to a plant operation in progress?
3) BRO UNIT : DATE THE	God UNITE 283 DATE THE
EVIEWED and APPROVED BY: FINAL A	PPROVAL
5) COGNIZANT FUNCTIONAL DIVISION MANAGER DATE	0) DUALITY ASSURANCE UNITS 1 2 AND 3 DATE
	Rected Unit(s) [signs Plan) Management Staff line(s)] and final approval from the CFDM prior to submitts

ATT BY 13 ... BY 2 17 17 64

^{** #} DA Affecting approves shall be by one member of the Plant Management Staff, and one SRO Licensed on the unit or units affected. (For TCN approval members of the Plant Management Staff are defined in the supervisor in charge of the affect or as designated in enring by the CFOM, exercising responsibility in the specific area and unit(s) addressed by the change.)

**** # YES me Shift Superintendent shall provide the required SRO approval.

INSERVICE TESTING OF VALVES PROGRAM

1.0 OBJECTIVES

- 1.1 To define the requirements for inservice testing of ASME Code Class 1, 2 and 3 valves.
- 1.2 Further, it is the object of this procedure to meet the requirements of References 2.4.5, 2.4.1 and 2.1.1 through 2.1.13, and 2.1.16 through 2.1.19. A complete description of organizational responsibilities to meet the requirements of Reference 2.4.5 is provided in Reference 2.2.1. This program is in compliance with References 2.4.2 and 2.4.4. except as noted in approval valve relief requests, see Attachment 7.
- 1.3 To describe and delineate applicable tests and utilize the tests for both pre-service and inservice testing unless indicated otherwise.

2.0 REFERENCES

2.1 NRC Commitments

- Letter, K. P. Baskin (SCE) to G. W. Knighton (NRC), Docket 2.1.1 No. 50-361 [Forwarded Unit 2 Program, Revision 5], July 5, 1983
- Letter, K. P. Baskin (SCE) to G. W. Knighton (NRC), Docket 2.1.2 No. 50-361 [Forwarded Unit 3 Program, Revision 0], July 5, 1983
- Letter, M. D. Medford (SCE) to G. K. Knighton (NRC), Docket 2.1.3 Nos. 50-361 and 50-362 [Forwarded Unit 2 Program, Revision 6 and Unit 3 Program, Revision 1], October 31, 1983
- Letter, M. O. Medford (SCE) to G. W. Knighton (NRC), Docket 2.1.4 Nos. 50-361 and 50-362 [Forwarded Unit 2 Program, Revision 7 and Unit 3 Program, Revision 2], May 11, 1984
- 2.1.5 Letter, M. O. Medford (SCE) to G. W. Knighton (NRC), Docket Nos. 50-361 and 50-362 [Forwarded Unit 2 Program, Revision 8 and Unit 3 Program, Revision 3], September 26, 1984
- 2.1.6 Letter, M. O. Meaford (SCE) to G. W. Knighton (NRC), Docket Nos. 50-361 and 50-362 [Forwarded Unit 2 Program, Revision 9 and Unit 3 Program, Revision 4], April 4, 1985
- 2.1.7 Letter, M. O. Medford (SCE) to G. W. Knighton (NRC), Docket Nos. 50-361 and 50-362 [Forwarded Unit 2 Program, Revision 10 and Unit 3 Program, Revision 5], July 23, 1985
- 2.1.8 Letter, M. O. Medford (SCE) to G. W. Knighton (NRC), Docket Nos. 50-361 and 50-362 [Forwarded Unit 2 Program, Revision 11 and Unit 3 Program, Revision 6], December 19, 1985

2.0 REFERENCES (Continued)

- 2.1.9 Letter, M. O. Medford (SCE) to G. W. Knighton (NRC), Docket Nos. 50-361 and 50-362 [Forwarded Unit 2 Program, Revision 12 and Unit 3 Program, Revision 7], October 10, 1986
- 2.1.10 Letter, ' Rood (NRC) to K. P. Baskin (SCE), Interim Relief From Requirements for Inservice Pump and Valve Testing Under 10 CFR 50.55a(g)(1), December 24, 1986
- 2.1.11 Letter, M. O. Medford (SCE) to NRC Document Control Desk,
 Docket Nos. 50-361 and 50-362 [Forwarded Unit 2 Program,
 Revision 13 and Unit 3 Program, Revision 8], August 21,
 1987
- 2.1.12 Letter, F. R. Nandy (SCE) to NRC Document Control Desk,
 Docket Nos. 50-361 and 50-362, Inservice Testing Program
 for Pumps and Valves (TAC 55120/1) [Forwarded Unit 2
 Program, Revision 14 and Unit 3 Program, Revision 9],
 May 18, 1990
- 2.1.13 Units 2 and 3 Technical Specifications
- 2.1.14 Topical Quality Assurance Manual (TQAM)
- 2.1.15 Final Safety Analysis Report (FSAR)
- 2.1.16 Letter, F. R. Nandy (SCE) to NRC, Docket Nos. 50-361 and 50-362, Status of NRC Safety Evaluation Report, Appendix C Items for the Inservice Testing Program for Pumps and Valves [Forwarded Unit 2 Program Status], April 12, 1991
- 2.1.17 Letter, R. M. Rosenblum (SCE) to NRC, Docket Nos. 50-361 and 50-362, Inservice Testing Program for Pumps and Valves TAC Nos. 55120/1 [Forwarded Unit 2 Program, Revision 15 and Unit 3 Program, Revision 10], June 18, 1001
- 2.1.18 Letter, R. M. Rosenblum (SCE) to NRC, Docket Nos. 50-361 and 50-362, Inservice Testing Program for Pumps and Valves TAC Nos. 55120/1 [Forwarded Unit 2 Program, Pevision 16 and Unit 3 Program, Revision 11], July 31, 1991
- 2.1.19 Letter, J. E. Dyer (NRC) to al. B. Ray and G. D. Cotton.
 Safety Evaluation of Licensee Responses to Staff's
 Technical Evaluation Report Items and Revised Relief
 Requests to the IST Program for Pumps and Valves (TAC Nos.
 80642 and 80643), October 2, 1991

2.2 Order

2.2.1 SO123-IN-1, Inservice Inspection Program

2.3 Procedures

2.3.1 SO23-V-3.5.4. Inservice Testing of Check Valves

2.0 REFERENCES (Continued)

- SO23-V-3.13, Containment Penetration Leak Rate Testing 2.3.2
- SO123-XV-5. Nonconforming Material, Parts or Components 2.3.3
- SO23-XV-6, Technical Specification Response Time 2.3.4 Surveillance implementing Procedure Master List
- Operating Instruction SO23-3-3.31.1, RCS Pressure Isolation 2.3.5 Valve Leak Rate Measurement

2.4 Other

- Code of Federal Regulations, Title 10, Part 50 2.4.1
- NRC Generic Letter 89-04, Guidance on Developing Acceptable 2.4.2 Inservice Testing Programs, April 3, 1989
- Letter, J. G. Partlow, NRC, to All Licensees, etc. Minutes 2.4.3 of the Public Meetings on Generic Letter 89-04, October 25, 1989
- NRC Safety Evaluation Report transmitted by letter, L. E. 2.4.4 Kokajko (NRC) to H. B. Ray (SCE) and G. D. Cotton (SDG&E), Safety Evaluation Report of the Inservice Testing (IST) Program for Pumps and Valves, September 24, 1990
- American Society of Mechanical Engineers (ASME), Boiler and 2.4.5 Pressure Vessel Code, Section XI, 1977 Edition, including Addenda through Summer 1979
- Memo for File, March 27, 1986, Set-point Verification Test 2.4.6 Requirements

3.0 PREREDUISITES

- 3.1 Prior to use of a user-controlled copy of this document, it is the user's responsibility to verify that the revision and any TCNs are current by utilizing one of the following methods:
 - 3.1.1 Check it against a Corporate Documentation Management-SONGS (CDM-SONGS) controlled copy and any TCNs.
 - 3.1.2 Access the San Onofre Doument Management System (SDMS) [San Onofre local area network (SLAN) or online system].
 - 3.1.3 Contact CDM-SONGS by telephone or through counter inquiry.
 - 3.1.4 Obtain a user-controlled copy of this procedure from CDM-SONGS or SDMS SLAN.

3.0 PREREQUISITES (Continued)

3.2 The implementing Procedures shall be updated within one (1) month after an approved revision or :.. " this procedure is issued by CDM. The Technical Division IST Coord. all provide the Station Operations and Maintenance Manager with a copy of the approved revision to serve as notification of a revision.

4.0 PRECAUTIONS

- 4.1 The ASME Section XI test requirements (Reference 2.4.5) apply only to selected valves that can be tested without placing the Plant in an unsafe condition. Therefore, care should be exercised that no test will be conducted so a failure of the test would put the Plant in an unsafe condition.
- 4.2 Special care must be exercised to ensure that the allowed test interval is not exceeded. For valves routinely tested at one (1) or three (3) month intervals, a test interval extension is allowed. This extension shall not exceed twenty-five percent (25%) of the inspection interval.

5.0 CHECKLIST(S)

5.1 None

6.0 PROCEDURE

6.1 Test Interval

- The valve inservice testing program covers a ten (10) year 6.1.1 interval commencing on August 18, 1983 and terminating on August 17, 1993 as stated in Reference 2.1.8.
- 6.1.2 When the Edition and Addendum of the Code are changed, such as at the beginning of a new ten year interval, the following individuals and agencies shall be notified and provided a copy of the new program: State of California [See Reference 2.1.14, the TQAM], ANII, NRC. In addition, the following documents may need updating and shall be reviewed and updated as necessary: FSAR [Reference 2.1.15], Valve Relief Requests, TQAM and Technical Specifications [Reference 2.1.13].

6.2 Pre-service Testing

6.2.1 Each valve, after installation and prior to service, shall be tested as required in Reference 2.4.5, Article IWV-3000. These tests shall be conducted under conditions similar to those to be experienced during inservice tests. Safety and relief valves which will be removed and bench tested during subsequent inservice tests need not be installed prior to the preservice test.

6.3 Valve Categors

- 6.3.1 Valves are categorized as follows: [Reference 2.4.5, IWV-2200]:
 - .1 Category A valves for which seat leakage is limited to a specific maximum amount in the closed position for fulfillment of their function.
 - .2 Category B valves for which seat leakage in the closed position is inconsequential for fulfillment of their function.
 - .3 Category C valves which are self-actuating in response to some system characteristic, such as pressure (relief valves) or flow direction (check valves).
 - .4 Category D valver which are actuated by an energy source capable of only one operation, such as rupture disks or explosive actuated valves.

NOTE: Valves identified in this Procedure have been placed in one or more of these categories. When more than one distinguishing category characteristic is applicable, all requirements of each of the individual categories are applicable. Duplication or repetition of common testing requirements is not necessary.

- All check valves are Category "C", however, some require that their seat leakage be limited to a specific amount. In these cases they are categorized at Category "AC". The categorization of a check valve is not dependent solely on the function performed by the valve, such as whether it is a containment isolation valve. When determining the category of a check valve, as a minimum, the folic aspects of its performance requirements shall be considered. If any of these considerations indicate that Category "C" testing may not be adequate, the check valve shall be assigned Category "AC" and shall receive a seat leak test as required by this program [See Reference 2.4.3, Question 107].
 - Determine whether the flow requirements for connected systems can be achieved with the maximum possible leakage through the check valve.
 - .2 Evaluate the effect of reduced system flows resulting from the leakage of the check valve on the performance of other systems and components.

- Evaluate the consequences of the loss of water from the 6.3.2.3 system.
 - Evaluate the effect that backflow through the valve may .4 have on piping and components, such as the effect of high temperature and thermal stresses.
 - Determine the radiological exposure to plant personnel and . 5 the public caused by the leak.

6.4 Requirements

- This program uses the same test interval definitions as 6.4.1 those used in the Technical Specifications, namely, one month is defined as 31 days and one quarter is defined as 92 days.
- Reference 2.4.5, Subsection IWV defines the requirements 6.4.2 for in service testing of lode Class 1, 2 and 3 valves. Test results are intended to verify valve operational readiness on a continuing tasis.
- Concerning valves tested at Cold Shutdown Intervals: 6.4.3
 - The establishment of the priority and test schedule for cold shutdown valves is the responsibility of the Station Technical Division. The IST Coordinator of the Technical Division will execute this responsibility.
 - (See Attachment 7, VRR No. 24) For each outage of greater . 2 than 48 hours, the IST Coordinator will provide two lists of valves to be tested prior to returning to Mode 2 to Operations and Maintenance.

List #1: Valves which must be tested each outage (if it has been greater than 90 days since the last test).

List #2: Additional valves which must be tested for the specific outage.

NOTE: When a valve is needed in cold shutdown for system operability ...amples: the shutdown cooling system, boric acid flow path or RCS inventory control), but cannot be tested in advance of reaching cold shutdown, the valve shall be tested within 48 hours of being placed in service. This testing should be incorporated into the procedure for initiating system operation upon reaching the applicable mode.

- Operations and Maintenance will be required to conduct the testing prior to entering Mode 2 from cold shutdown and, within 30 days, provide the test results to the IST Coordinator. The Operations Supervisor of Plant Coordination and the Unit Maintenance Manager shall have the responsibility for monitoring the surveillance schedule for all valves, except for those listed in Reference 2.3.1. (These are the responsibility of the Technical Division.)
 - .4 Following each outage, the IST Coordinator will review the valve IST results and create a list (as in step 6.4.2.2.1 above) of the next set of valves requiring tests. This list will be based on four factors:
 - a. The importance-to-safety assigned each valve not tested in the last 90 days.
 - b. The maintenance history (reliability) of each valve.
 - c. The time since each valve was tested.
 - d. As a matter of policy, an initial requirement of 25% (minimum) of all cold shutdown valves will be tested each Mode 5 for the outage of greater than 48 hours duration.

This new list will be sent to Operations and Maintenance, as in step 6.4.3.2 above, and the process repeated.

- .5 The test schedule for valves tested quarterly or at refueling intervals will not be addressed in the memo discussed above. Attachments 2 and 4 of this procedure provide sufficient direction for these tests.
- 6.4.4 Attachments 2 and 4 itemize all valves subject to the test requirements of this Procedure including the valve category and test mode.
- 6.4.5 Category A and B Valves
 - .1 Test frequency: Category A and B valves shall be exercised at least once every three (3) months, with the exceptions defined below and as noted in Attachments 2 and 4.

6.4.5.2 Exercising Procedure

NOTE: Valves tested at cold shutdown intervals shall be tested when and as directed by the Technical Division IST Coordinator. See step 6.4.2.2, above.

- fulfill their function, unless such operation is not practical during Plant operation. If only limited operation is practical during Plant operation, the valve shall be part-stroke exercised during Plant operation and full-stroked during each cold shutdown. Valves that cannot be exercised during normal Plant operation are specifically identified in Attachments 2 and 4 and shall be full-stroke exercised during each cold shutdown.
- .1.1 In case of frequent cold shutdowns, these valves need not be exercised more often than once every three (3) months.
- The necessary valve stem or disk movement shall be established by exercising the valve while observing either an appropriate indicator, which signals the required change of valve stem or disk position, or indirect evidence, such as changes in system pressure, flow rate or temperature which reflect stem or disk position.
- .3 Power Operated Valves

NOTE: If a valve exceeds its limiting stroke time it shall be considered INOPERABLE until it is analyzed and the disposition is documented on an NCR. If a valve stroke time increases such that it is still within its limiting stroke time, but must be tested once each month as discussed below it shall be considered IN ALERT and may be considered OPERABLE unless other conditions or circumstances dictate differently.

- .1 The limiting value of full-stroke time of each power operated valve is specified, where applicable, in Attachments 2 and 4. Reference 2.3.4 stroke time limits are used where applicable.
- .2 The stroke time of all power-operated valves shall be measured to the nearest second or 10% of the maximum allowable stroke time, whichever is less, whenever such a valve is full-stroke tested.

- 6.4.5.3.2.1 The valve stroke time is measured with a stopwatch. The stopwatch is started when the valve is actuated and stopped when the back light for the desired valve position is the only one illuminated.
 - Test Requirement for valves in ALERT Range is stated in the Code as follows, "IWV-3413(c): if an increase in stroke time of 25 % or more from the previous test for valves with stroke times greater than 10 sec. or 50 % or more for valves with stroke times less than or equal to 10 sec. is observed, test frequency shall be increased to once each month until corrective action is taken, at which time the criginal test frequency shall be resumed."
 - .3.1 [See VRR No. 23 in Attachment 7] Instead of the previous stroke time, use a <u>REFERENCE STROKE TIME</u>.
 - .3.1.1 If an increase in stroke time of 25 % or more from the REFERENCE STROKE TIME for valves with stroke times greater than 10 sec. (or 50 % or more for valves with stroke times less than or equal to 10 sec.) is observed, test frequency shall be increased to once each month until corrective action is taken, at which time the original test frequency shall be resumed.
 - .3.1.2 REFERENCE STROKS TIME is the average stroke time since the last maintenance that could have affected stroke time (or last three strokes, whichever is greater). The REFERENCE STROKE TIME value if used for comparison of test data shall be established when the valve is known to be in good operating condition.
 - 3.2 During valve stroke testing, any abnormality or erratic action shall be reported to the SRO Operations Supervisor. He shall report this to the IST Coordinator, if, in his judgement and based on his previous experience, this is warranted. [See Reference 2.4.5, Paragraph IWV-3417(a)]. The objective of this requirement is to identify and repair valves (where needed) that are not operating properly, in cases where this is not reflected in an unusual or non-conforming stroke time.
 - .3.3 Power operated valves with normal stroke times of 2 seconds or less are referred to by the NRC staff as "rapid-acting valves." Relief has been granted from the requirements of Section XI, Paragraph IWV-3417(a) for these valves when the maximum limiting value of 2 seconds or less is assigned. When the 2 second limit is exceeded, the valve shall be declared inoperable and corrective action taken in accordance with Reference 2.4.5, Paragraph IWV-3417(b). Also, see VRR No. 16 in Attachment 7.

- 6.4.5.4 Valves in Regular Use
 - Valves which operate in the course of Plant operation at a 4 ... frequency which would satisfy the exercising requirements of this Procedure need not be additionally exercised, provided that the observations otherwise required for testing are made and analyzed during such operation and recorded in the Plant record at intervals no greater than three (3) months.
 - Valves in Systems Out of Service . 5
 - If valves are in a system that is out-of-service, .5.1 exercising is not required for such valves except within 30 days prior to the return of the system to service.
 - . 6 Fail-Safe Valves
 - Valves with fail-safe actuators shall be tested by .6.1 observing the operation of the valves upon loss of actuator power. If these valves cannot be tested once every three (3) months, they shall be tested during each cold shutdown. In case of frequent cold shutdowns, these valves need not be tested more often than every three (3) months.
- 6.4.6 Category C Valves
 - Safety and Relief Valve Tests . 1
 - NOTE: Safety and relief valves which will be removed and bench tested during subsequent inservice tests need not be installed prior to the preservice tests (Reference 2.4.5, Article IWV-3000). Otherwise, each valve, after installation and prior to service, shall be tested as required by Reference 2.4.5, Article IWV-3000. These tests shall be conducted under conditions similar to those to be experienced during subsequent inservice tests.
 - .1.1 Test Frequency
 - .1.1.1 The safety and relief valves will be tested with the following frequencies:
 - .1.1.1.1 There are 18 safety valves (of the same type) per unit in the main steam system for which testing is required. All valves will be tested on a schedule determined using Reference 2.4.5, Table IWV-3510-1 as shown in Attachment 6.

- 6.4.6.1.1.1.2 There are 2 pressurizer relief valves per unit. Each will be tested on a schedule determined using Reference 2.4.5. Table IWV-3510-1 as shown in Attachment 6.
 - .1.1.1.3 There is one (1) shutdown cooling line safety valve per unit. Each will be tested on a 30 month cycle.
 - .1.1.1.4 The scheduling and bookkeeping required for these tests shall be the responsibility of Maintenance.
 - .1.2 Testing Procedure
 - Safety and relief valve setpoints will be tested in .1.2.1 accordance with ASME Performance Test Code 25.3-1976 and Reference 2.4.6. Bench testing with suitable hydraulic or pneumatic equipment, testing with system pressure or testing in place with hydraulic or pneumatic assist equipment may be used.
 - Additional Tests .1.3
 - If any valve in a system fails to function properly .1.3.1 during a regular test, additional valves in the system shall be tested as determined by the requirements of Reference 2.4.5, Paragraph IWV-3513. If any of these additional valves fail to function properly on test, all valves in the system in this category shall be tested.
 - . 2 Check Valve Tests
 - .2.1 Test Frequency
 - .2.1.1 Check valves shall be exercised at least once every three months, with exceptions as defined below and in Attachments 2 and 4. Certain check valves are tested during the corresponding pump IST [See Reference 2.3.1].
 - .2.1.1.1 Check valves tested at Cold Shutdown intervals shall be tested when and as directed by the IST Coordinator in the Technical Division.
 - .2.1.2 The scheduling and bookkeeping required for these tests will be the responsibility of Station Engineering. To determine the operational mode required for valve testing, refer to Attachments 2 and 4. Test Mode Column.
 - .2.1.3 The responsibilities for testing (including scheduling and bookkeeping) of check valves are explained in Reference 2.2.1.

ENGINEERING PROCEDURE S023-V-3.5 NUCLEAR ORGANIZATION PAGE 13 OF 208 REVISION 7 UNITS 2 AND 3 TCN 7-16 6.0 PROCEDURE (Continued) 6.4.6.2.2 Exercising Procedure Check valves shall be exercised to the position required 2.2.1 to fulfill their function, unless such operation is not practical during plant operation. Normally closed check valves that cannot be operated during normal Plant operation are identified in Attachments 2 and 4 and shall be exercised during each cold shutdown or refuelings. In case of frequent cold shutdowns, these check valves need not be exercised more often than once every three (3) months. .2.2.1.1 Normally Gen Valves: Valves normally open during plant operation, whose function is to prevent reverse flow, shall be tested in a manner which proves that the disk travels to the seat promptly on cessation or reversal of flow. Confirmation that the disk is on its seat shall be by visual observation, by observation of appropriate pressure indications in the system, or by other positive means. Normally Closed Valves: Valves normally closed during .2.2.2 plant operation, whose function is to open on reversal of pressure differential, shall be tested by proving that the disk moves promptly away from the seat when the closing pressure differential is removed and flow through the valve is initiated, or a mechanical opening force is applied to the lisk. .2.2.2.1 Confirmation that the disk moves away from the seat shall be by visual observation, by observation of substantially free flow through the valve as indicated by appropriate pressure indications in the system, or by other positive means. This test may be made with or without flow through the valve. .2.2.2.2 Full Stroke testing (open) of theck valves is normally done using flow. NOTE: The following may be a new requirement for certain tests. Station Technical Division and Operations will jointly develop the revised test techniques, document the bases and implement them during the upcoming refueling cycles for Units 2 and 3 (to be completed prior to cycle 7). .2.2.2.2.1 The flow test shall be designed such that degradation of check valve performance can be detected. This means that rather than specifying only the minimum flow fore the test (example: "greater than 2000 gpm"), a range of acceptable flow shall be used (examples: "2000 ± 150 gpm", or, "1850 to 2150 gpm").

- 6.4.6.2.2.2.2.2 The test setup and alignment shall be standardized to the extent possible to allow comparison of results and examination of trends.
 - .2.2.2.3 The criteria and the basis for the criteria shall be documented and available for the auditors. (See Reference 2.4.3, Question 7).
- For valves identified in Attachments 2 and 4 that are to 6.4.7 be tested by disassembly, the internals shall be visually inspected for worn or corroded parts, and the valve disks shall be manually exercised. It shall be verified that the valve is capable of full-stroking and that the internals of the valve is structurally sound. This testing shall be conducted at each refueling outage on a rotating basis. One valve of this group (a group is identified as all the valves of the same manufacturer, size, model and service) will be tested each successive refueling outage, until the entire group has been tested. If the disassembled valve is not capable of being full-stroke exercised or there is binding or failure of the valve internals, the remaining valves in this group shall also be disassembled, inspected, and manually full-stroke exercised during the same outage. A partial flow test shall be performed on the disassembled valve following reassembly, but before it is returned to SETVICE.
 - and inspected in a non-refueling outage, the interval may altered for the balance of the group if it is justified in writing by the Technical Division Cog. Engineer and approved by the Cog. Engineering Supervisor. The justification shall address the effect of the proposed disassembly and inspection schedule on the sampling program. The justification shall address the maintenance history and known valve condition from the previous inspections rather than subjective qualitative judgement. Position 2 of Reference 2.4.2 indicates the criteria that need to be addressed (See Reference 2.4.3, Question 14).
- 6.4.8 Category D Valves
 - .1 There are no Category D Class 1, 2 or 3 valves at San Onofre Units 2 and 3. Therefore, the Section XI test requirements pertaining to this catego, are not applicable.
- 5.4 9 Containment Isolation Valves Requiring Seat Leak Tests
 - .1 These valves are identified in Attachments 2 and 4 and shall be tested at least once every two (2) years in accordance with Reference 2.4.1, Appendix J.

- 6.4.9.1.1 These valves are containment isolation valves and will be tested with a pressure differential in the same direction as when the valve is performing its function, with the following exceptions:
 - .1.1.1 Globe-type valves may be tested with pressure under the seat.
 - .1.2 Butterfly valves may be tested in either direction, provided their seat construction is designed for sealing against pressure on either side.
 - .1.3 Leakage Rate Analysis
 - .1.3.1 Leakage rate measurements will be compared with previous measurements and with the permissible leakage rates specified using Reference 2.3.2. The acceptance criterion (permissible Leak Rate) for each valve can be determined by taking the "0.6La" and subtracting the leak rates of all penetrations in the Appendix J Program except the valve under test. These are available from the records created in accordance with Reference 2.3.2. The result is the acceptance criterion of the valve under test in SCCM or other appropriate units.

NOTE: Where a question of the acceptability of the valve leak rate measurement may exist, the allowable leakage can be calculated using the rules of Reference 2.4.5, Subarticle IWV-3423(e).

- .1.4 Test Medium valve repair, replacement and maintenance
- .1.4.1 The test medium used for the leak rate tests will be specified in Reference 2.3.2 for the various valve tests.
- 6.4.10 Reactor Coolant System Pressure Isolation Valves Requiring Seat Leak Tests
 - .1 These valves are identified in Attachments 2 and 4 and shall be tested in accordance with applicable Operating Instructions.
 - .1.1 These valves are reactor coolant system pressure isolation valves, and will be tested with the pressure differential in the same direction as when the valve is performing its function, with the following exception:

- 6.4.10.1.1.1 Leakage tests involving pressure differentials lower than function pressure differentials are permitted in those types of valves in which service pressure will tend to diminish the overall leakage channel opening, as by pressing the disk into or onto the seat with greater force. Gate valves, check valves and globe-type valves having function pressure differential applied over the seat, are examples of valve applications satisfying this requirement.
 - When leakage tests are made in such cases using pressures .1.1.2 lower than function maximum pressure differential, the observed leakage shall be adjusted to function maximum pressure differential value. This adjustment shall be made by calculation appropriate to the test media and the ratio between test and function pressure differential, assuming leakage to be directly proportional to the pressure differential to the one-half power.
 - . 2 Leakage Rate Analysis
 - Leakage rate measurements shall be compared with previous .2.1 measurements and with the permissible leakage rates specified in Reference 2.3.5.
 - . 3 Test Medium
 - The test medium used for the leak rate tests will be .3.1 specified in applicable Operating Instructions.
- Valve Repair, Replacement and F Atenance 6.4.11
 - After a valve or its control system has either been .1 replaced, repaired or has undergone maintenance that could affect its performance, and prior to the time it is returned to service, it shall be tested as necessary to demonstrate that the performance parameters which could be affected by the replacement, repair, or maintenance are within acceptable limits. Adjustment of stem packing, removal of the bonnet, stem assembly or actuator, or disconnection of hydraulic or electrical lines are examples of maintenance that could affect valve performance parameters.
- Position Indication Test (PIT) 6.4.12
 - .1 All valves with remote position indicators which are inaccessible for direct observation during Plant operation shall be visually observed at the same (or greater) frequency as scheduled refueling outages, but not less than one observation every two (2) years to confirm that remote valve indications accurately reflect valve operation.

NOTE: The requirements to initiate an NCR apply to the IST Program. See Reference 2.3.3 for NCR initiation criteria.

8.5 Corrective Measures

- NOTES: 1. It will be the Shift Superintendent's responsibility to determine the Technical Specification requirements for operability of the affected system.
 - The requirements to initiate an NCR apply to the IST Program. See Reference 2.3.3 for criteria applicable to the initiation of NCRs.
 - THE TECHNICAL SPECIFICATION CLOCK: In cases during valve 3. testing in systems covered by the Technica! Specifications, if the valve is declared inoperable, this would result in the plant entering an action statement of the Technical Specifications. When a valve fails its IST, the valve is considered inoperable and the Technical Specification Action Statement time starts. Recalibration of instrumentation and retesting to show the valve is still capable of fulfilling its function are an alternative to replacement or repair and not an additional action that can be taken before declaring the valve inoperable. In summary, the NRC has taken the position (Reference 2.4.2, Attachment 1, position 8) that as soon as the data is recognized as exceeding the limiting value of full-stroke time for valves, the associated valve must be declared inoperable and the Technical Specification Action time must be started.

Category A and B valves

- .1 If a valve fails to exhibit the required change of valve stem or disk position, notify the Shift Superintendent immediately. Corrective action shall be initiated immediately. The valve shall be declared inoperable as required by the Technical Specifications (Reference 2.1.3).
- 6.5.1.2 When corrective action is required as a result of tests made during cold shutdown, the condition shall be corrected before startup. A retest showing acceptable operation shall be run following any required corrective action before the valve is returned to service.

6.5.2 Category C Valves

.1 Safety and relief valves failing to function properly during testing shall be repaired or replaced, and shall successfully pass a retest before being returned to service.

- If a check valve fails to exhibit the required change of 6.5.2.2 disk position, notify the Shift Superintendent immediately. Corrective action shall be initiated immediately. The valve shall be declared in cerable immediately per Technical Specifications. When corrective action is required as a result of a scing during cold shutdown, the condition shall be corrected before startup. A retest showing acceptable performance shall be run following any required corrective action before the valve is returned to service.
- Valves Requiring Seat Lea'. Tests 6.5.3
 - Valves with leakage rates exceeding the permissible .1 leakage rates will by replaced or repaired.
 - Reference 2.4.5, Paragraph IWV-3427(b), specifies . 2 additional requirements on increased test frequencies for valve sizes of six inches and larger and repairs or replacement over the requirements of IWV-3427(a). The NRC has determined that the usefulness of Paragraph IWV-3427(b) does not justify the burden of complying with this requirement. Accordingly, this Paragraph is not implemented in this program. [See Reference 2.4.2, Position 10].

Exceptions

NOTE: Valves which fall into the classifications below are identified in Attachments 2 and 4 and shall be cycled, as practicable, at each cold shutdown or refueling, but not more often than once every three (3) months.

- Any valve which, when exercised (cycled), could put the 6.6.1 Plant in an unsafe condition, should not be tested. Below are examples of the types of valves excluded from exercising (cycling) tests during Plant operation.
 - .1 All valves whose failure in a nonconservative position during the cycling test would cause a loss of system function.
 - . 2 All valves whose failure to close during a cycling test would result in a loss of Containment integrity.
 - . 3 All valves which, when cycled, could subject a system to pressures in excest of their design pressures.

6.7 Instrumentation

Instrumentation used shall meet the requirements of 6.7.1 Reference 2.4.5. Instruments, together with their transmitters, where used, shall be calibrated in accordance with the appropriate Maintenance Procedures.

6.8 Determination of Program Scope

- Our strategy for determining the valve IST program scope 6.8.1 involves the following [See Reference 2.4.2, Attachment 1. Position 11]:
 - Review of design changes by the IST Coordinator. . 1
 - Guidance on IST Scope rules is provided to the . 2 engineering organizations associated with the design process.
 - Critaria used for determining IST Program scope includes . 3 References 2.4.5, 2.4.2 and 2.4.3 and Regulatory Guide 1.26. In addition Engineering judgement and prudence are applied when reference criteria are not directly applicable.
- The following activities apply to cases where plant 6.8.2 conditions prevent full stroke testing with flow for check valves to be tested in the open direction. The IST Coordinator and the Cog Engineer will periodically evaluate whether plant conditions have been altered in such a way that full stroke testing using flow is possible. If so, the program shall be revised as well as the test procedures to provide for such testing. [Reference 2.4.3, Question 11.]
- Determination of Reasonableness of Stroke Time Acceptance 6.8.3 Criteri for Power Operated Valves
 - Position 5 of Attachment 1 to Reference 2.4.2 states, in part:

"... IWV-3413(a) of the ASME Code requires that the licensee specify the limiting value of full-stroke time of each power operated valve. The corrective action of IWV-3417(b) must be followed when these limiting values are exceeded. The Code does not provide any requirements or guidelines for establishing these limits nor does it identify the relationship that should exist between these limits and any limits identified for the relevant valves in the plant Technical Specifications or safety analysis.

REVISION 7 TCN 7 "16

6.0 PROCEDURE (Continued)

6.8.3.1 (Continued)

"The purpose of the limiting value of full-stroke time is to establish a value for taking corrective action on a degraded valve before the valve reaches the point where there is a high probability of failure to perfor its safety function if called upon. The NRC has, the afore, established the guidelines described below regarding limiting values of full-stroke time for power operated valves.

"The limiting value of full-stroke time should be based on the valve reference or average stroke time of a valve when it is known to be in good condition and operating properly. The limiting value would be a reasonable deviation from this reference stroke time based on the valve size, valve type, and actuator type. The deviation should not be so restrictive that it results in a valve being declared inoperable due to reasonable stroke time variations. However, the deviation used to establish the limit should be such that corrective action would be taken for a valve that ma: not perform its intended function.

"When the Technica' Specifications or safety analysis limit for a valve is less than the value established using the above guidelines, the Technical Specifications or safety analysis limit should be used as the limiting value of the full-stroke time.

"When the Technical Specifications or safety analysis limit for a valve is greater than the value established using the above guidelines, the limiting value of full-stroke time should be based on the above guidelines instead of the Technical Specifications or safety analysis limit."

- 6.8.3.2 Periodically, the IST Coordinator will review the stroke time history and average stroke times for each valve in the Units 2 and 3 IST Programs and determine the appropriate stroke time limits. This determination will use the above guidelines. Revised stroke time limits will be incorporated into the IST Program documents.
- 6.8.4 Design reviews discussed previously will provide the IST Coordinator with a mechanism to reverify that Relief Requests are still valid based on ongoing plant modification activities. In addition, the IST Coordinator will keep abreast of changes in technology for this same purpose. [Reference 2.4.3, Question 69].

- 6.8.5 Application of Post-Modification Results
 - In addition to changes in scope of the IST Program, design modification may also possibly affect the testing even though no component additions or deletions occur as a result. For example if any valve operator is modified or replaced, the stroke time might be affected for a valve already in the IST Program.
 - Accordingly, these design changes will be identified as "IST Program Affecting". By the engineer developing the change package in accordance with the design procedures currently in effect. The IST Coordinator will review these changes, and determine if there is an impact on the IST programs such as a stroke time limit change.
 - .3 The IST Coordinator is responsible for determining if an IST Program change is needed an implementing it as soon as reasonably achievable.
 - .3.1 This might include requesting additional non-routine stroke tests to determine if the stroke time has been changed substantially for a modified valve and then changing the IST Program to reflect the newly developed requirements.

7.0 RECORDS

- 7.1 Records pertaining to inservice testing of valves shall be maintained in accordance with Reference 2.4.5, Article IWV-6000 of Section XI. The records shall include, as a minimum, the following:
 - 7.1.1 A summary listing consisting of a schedule check-off list for valve testing and bookkeeping processes, and
 - 7.1.2 Records of tests and examinations.
- 7.2 Records of tests and examinations shall be provided to the Technical Division IST Coordinator (or made available for inspection) within 30 days of completion of the test or examination (copy), and to CDM-SONGS (original) as soon as possible thereafter by Operations and Maintenance.

INSERVICE VALVE TESTING

TABLE INFORMATION

- A. Attachments 2 and 4 display the following columns:
 - Code Class: ASME Section III Class of the valves listed.
 - Sec XI Cat .: ASME Section XI Category, See IWV-2200. 2.
 - Yalve and Actuator Type: Abbreviated as follows: 3.

Valve Type	Abbreviation
Gate Globe Check Safety Relief Butterfly Stop Check Ball Split Disc Check Angle	GA GL CK SV RV BTF SCK WALL SDCK AV

Actuator Type	Abbreviatio
Motor Operated	MO
Air Operated	A0
Solenaid Operated	SO
Hydraulic Operated	HY
Self Actuated	SA
Manual	M
Electro Hydraulic	EH

- Norm Pos.: Normal position of the valve.
- Test Type and Mode: Test lists the test or tests that will be 5. performed for each valve to fulfill the requirements of Reference 2.4.5. Subsection IWV. The following tests and abbreviations are used:

Seat Leak Test AT

Valve will be seat leak tested at the appropriate functional differential pressure.

Full Stroke Exercise Test BT

Valve will be full stroke exercised for operability in the direction necessary to fulfill its safety function.

ENGINEERING "ROCEDURE S023-V-3.5 REVISION 7 PAGE 23 OF 208 ATTACHMENT 1 TCN 7 16

INSERVICE VALVE TESTING (Continued)

5. (Continued)

Partial Exercise Test BTP

Valve will be part-stroke exercised when full stroke exercising is impractical.

Check Valve Exercise Test CVT

Check valve will be exercised to the position required to fulfill its function. This functional test will be verified by the operation of the required system.

Check Valve Partial Exercise Test CVP

Check valve will be part stroke exercised, (i.e., disc moves away from seat) when full stroke exercising is impractical.

Fail Safe Test FST

All valves with fail-safe actuators will be tested to verify proper fail safe operation upon loss of actuator power.

Position Indication Check PIT

A?1 valves with remote position indicators will be checked to verify that remote valve indications accurately reflect valve position.

Relief Valve Setpoint Check RVT

Relief and Safety vavle setpoints will be verified in accordance with Reference 2.4.5 IWWV-3510.

ENGINEERING PROCEDURE S023-V-3.5 PAGE 24 OF 208 REVISION 7 ATTACHMENT 1 TCN 7-16

INSERVICE VALVE TESTING (Continued)

Test Mode indicates the frequency at which the tests will be performed. The following abbreviations are used:

Cold Shutdown CS

(See Attachment 7, VRR No. 24) Valve testing at cold shutdown is valve testing which commences not later than forty-eight (48) hours after cold shutdown and continues until required testing is completed or plant is ready to return to service. "Cold Shutdown" testing will be initiated within 48 hours of entry into Mode 3 for valves requiring testing in Mode 3, within 48 hours of entry into Mode 4 for valves requiring testing in Mode 4, and within 48 hours of entry into Mode 5 for valves requiring testing in Mode 5. Completion of all required valve testing is not a requisite to plant startup. Valve testing which is not completed during a cold shutdown will be performed during subsequent cold shutdowns to meet the Code specified testing requirements. No valve need be tested more often than once every 90 days. Section XI of the Code uses Cold Shutdown "CS" for all modes other than Operating and Refueling and therefore "C3" as used in the IST Program can include Tech Spec Modes 3, 4 or 5. All CS valves are not testable in all modes and therefore applicable implementing procedures (Operating Instructions) will specify which valves can be tested in a given Mode.

NOTE:

For planned cold shutdowns, where testing of all the valves identified in the IST program for testing in the cold shutdown mode will be completed, exceptions to the 48 hours may be taken.

Normal Operation OP

Valve tests with this designation will be performed once every three months.

Reactor Refueling RR

Tests with this designation shall be conducted at least once every two years [See Reference 2.4.5, Paragraph IWV-3422] except for relief valve tests which are scheduled in accordance with Reference 2.4.5, Paragraph IWV-3511.

Str. Time: Stroke time upper limit. The valve under test may stroke at any duration up to and including this value, unless otherwise noted in the table.

INSERVICE VALVE TESTING (Continued)

- 7. Test Organization (Procedure): "O" indicates that the Operations Division is responsible for conducting this test, "M" indicates the Maintenance Division and "T" indicates the Station Technical Livision. The entry in parentheses is the Procedure number used to conduct the test.
- 8. Notes and Valve Relief Requests: Self-explanatory (see Section B, Explanation of Notes).
- 9. Operational modes as defined by the Technical Specifications are as follows:

	Mode	Reactivity Condition, K,,,	% of Rated Thermal Power*	Average Coolant Temperature
1 -	Power Operation	≥ 0.99	> 5%	≥ 350°F
2 -	Startup	≥ 0.99	≤ 5%	≥ 350°F
3 -	Hot Standby	< 0.99	0	≥ 350°F
4 -	Hot Shutdown	< 0.99	0	350°F>T _{avg} >200°F
5 -	Cold Shutdown	< 0.99	0	≤ 200° F
6 -	Refueling **	≤ 0.95	0	≤ 140°F

^{*} Excluding Decay Heat

^{**} Fuel in the reactor vessel with the vessel head closure bolts less than fully tensioned or with the head removed.

B. EXPLANATION OF NOTES

NOTES:

- This valve will be tested by disassembly, the valve internals shall be visually inspected for worn or corroded parts, and the valve disk shall be manually exercised. See Section 6.4.6 for additional details of the testing requirements for this valve.
- This valve is a safety valve or relief valve and will be tested at the frequency stated in reference 2.4.5, IWV-3511.
- The maximum stroke time associated with these valves are protected values and may only be changed under certain circumstances. See Attachment 8.
- 4. The maximum allowable stroke times for valves 2(3)HV4705, 2(3)HV4706, 2(3)HV4715, 2(3)HV4716 and 2(3)HV4730 are protected values and may not be relaxed without revision to the disposition of Non-conformance Report (NCR) G-992.
- This valve cannot be partially stroke exercised during Plant operation.
- All motor operated valves fail as is and, therefore, do not require a fail-safe test as described in Reference 2.4.5, IWV-3415.
- 7. This valve is stroked manually only. It does not function as a power operated valve during the design basis event and is therefore tested by local manual actuation. Accordingly, there is no acceptance limit for stroke time.
- This valve is tested when the Containment spray system is tested per the Technical Specifications.
- 9. Main Steam Isolation Valves 2(3)HV8204 and 2(3)HV8205 shall be part stroke tested quarterly and full stroke tested at cold shutdown intervals. Solenoid pilot valves 2(3)HY8204X1 2(3)HY8204X2, 2(3)HY8205X1 and 2(3)HY8205X2 shall each be exercised semi-annually. Solenoid pilot valves 2(3)HY8204Y1, 2(3)HY8204Y2, 2(3)HY8205Y1 and 2(3)HY8205Y2 shall be exercised at cold shutdowns. ("X1" and "Y1" are train "A" and "X2" and "Y2" are train "B".) This testing is in accordance with NCR 3-2504 and cannot be changed without a revision of this NCR. Also, see Technical Specification Requirement 4.1.6.3.
- The seat leakage test for this valve will be performed in accordance with 10 CFR 50 (Reference 2.4.1), Appendix J requirements (see Procedure paragraph 6.4.8).
- 11. Inservice Testing of Unit 2 and Unit 3 Main Steam Dump Valves will commence with completion of design changes identified in NCR G-949.

ENGINEERING PROCEDURE S023-V-3.5 REVISION 7 ATTACHMENT 1 TCN 7 - 16

PAGE 27 OF 208

EXPLANATION OF NOTES (Continued)

- 12. Inservice Testing of valves S2(3)1301MU027 and S2(3)1301MU034 will commence with completion of facility changes (PFCs) 2-89-6753 for Unit 2 and 3-89-6753 for Unit 3.
- 13. The nitrogen supply valves to the CCW Surge Tanks are tested in pairs. That is to say, each pair is treated as a single valve for purposes of the seat leak test. These valves are in series and therefore cannot be tested for seat leakage separately.
- 14. The maximum allowable closure times for valves 2(3)HV-6212, 2(3)HV-6213, 2(3)HV-6218 and 2(3)HV-6219 are protected values and may not be changed without revision to the disposition of Nonconformance Report (NCR) G-852.
- 15. 2(3)PSV9349 is a pressure relief valve and will be tested at the frequency stated in the Technical Specifications.
- 16. Not used.
- 17. This valve is tested by indirect indication. The 10 second time duration is the nominal time required to start the diesel engine. During this time interval while engine is cranking to start, the air start solenoid valves and air relay valves are open. All moving parts of t' se valve are internal to the valve body. No position indicators external to the valve body exists. The only positive means of indication that valve has stroked open during is either by witnessing the operation of the air start motors or witnessing the misting of exhaust air from the air start motors. Valve degradation or malfunction of operation will reduce diesel engine starting speed. These valves were purchased as part of the diesel generator skid and are non-code valves (therefore, no Valve Relief Request is necessary).
- 18. This check valve is required to undergo a partial stroke test (as a minimum) using flow following disassembly, inspection and reassembly (see the various VRRs).

NUCLEAR ORGANIZATION UNITS 2 AND 3

ENGINEERING PROCEDURE SO23-V-3.5 REVISION 7 ATTACHMENT 2 TCN 7-16

PAGE 28 OF 208

INDEX

<u>System</u>																					Page	Die.
Air Condicioning System																*					25	9
Auvil and Dailan Suctom				-	12	12.	4			16	16		A				7		9	.7t. =	100.2	
Annal Lamy Enaduator				140	120			. 4	-	16	4	*		4	- 0		*			78	100	
Prince and the state of the sta													2	14	100	1.00	4		146	- 6	107.1	
																						3
I amb a summand County									1.60	- 40	- 76	-	- 6		- 66	- 8				-		95.
Dinnel Panemakan Rin Chart Cit	e # 64	PRO:								-	-	-	146	-	- 16						4 (8)	
Fine Ductaction	*																	-1	*	4	. 5	0
Fire Protection	*						*				Ď.										. 5	0
I decided Dadwards										100	140		4	*	6	4.1		- 6	4	-	-1 67	*
Nitrogen Gas					*	*								0							. 5	1
Nuclear Sampling				*		*	*			*											. 5	2
Nuclear Service Water	*					*															. 5	6
Reactor Coolant											*										. 5	6
Resp. & Service Air System .	*			*	8	*				*											. 5	9
Safety Injection			*	*	*	*															. 6	0
Salt Water Cooling		9		. *	*	*	*	, ,			*			*							. 7	2
Steam	*	* '		. 1	*	*	*	, ,			1	*									. 7	C
Sumps and Drains	*	4 1		*	4	*						*		*							7	C
Sumps and Drains	4	* 1				*	9	* 1		*		*			*	*					4	-

ENGINEERING PROCEDURE S023-V-3.5 PAGE 29 OF 208 REVISION 7 ATTACHMENT 2 TCN 7-16

UNIT 2

10/16/91

Inservice Testing Program for Valves
San Onofre Nuclear Generating Station

(Test Org's: M=Maintenance, 0 = Operations, T = Technical)

Discussion of Cold Shutdown Intervals, See Next Att.

Sec Code XI Size Class Cat (in.)	Valve and Actuator Norm Type Pos.	Test Type and Str. Mode Time	Test Organizatica (Procedure)	Notes and Valve Relief Requests
** System: Air	anditioning Sy	stem		
* 2HCV9918, Hyd	rogen Purge Ex	haust Control	Valve	
* 2HCV9918, Hyd (Dwg.: 40172B/ 2 A &	G-2) Valve Mig BTF/M C	AT/RR	T(S023-V-3.13)	10
* 2HCV9945, Hyd			harge Valve	
(Dwg.: 401728/ 2 A 6	H-5) Valve Mfg BTF/M C	.: Fisher AT/RR	T(S023-V-3.13)	10
* 2HV9917, Cont	ainment Hydrog	en Purge Outl	et Valve	
(Dwg.: 40172B/ 2 A 5	G-3) Valve Mfg BTF/MO C	.: Fisher AT/RR	T(S023-V-3.13)	6&10
* 2HV9946, Cont	ainment Hydrog	en Purge Inle	t	
(Dwg.: 401728/ 2 A 6	G-4) Valve Mfg BTF/MO C	.: Fisher	T(S023-V-3.13)	6&10
* S21500MU038 (3/4-038-C-396)	, ILRT Pressu	rization Connection	in
(Dwg.: 401718/ 2 A 3/4	C-2) Valve Mfg GL/M C	.: Kerotest AT/RR	T(S023-V-3.13)	10
* \$21500MU039 (3/4-039-C-396)	, ILRT Pressu	rization Connectio	in
(Dwg.: 40171B/ 2 A 3/4	D-1) Valve Mfg GL/M C	.: Kerotest AT/RR	T(S023-V-3.13)	10
** System: Auxil	iary Boiler Sy	stem		
* S21312MU037	(2-037-C-38	7), Auxiliary	Steam Inside Cont	ainment
(Dwg.: 40169C/	Isolation V D-4) Valve Mfg	.: Vogt		
			T(S023-V-3.13)	
	Isolation V	alva	Steam Outside Con	
(Dwg.: 40169C/	E-4) Valve Mfg GA/M C	.: Vogt	T(S023-V-3.13)	10

EMOINEERING PROCEDURE S023-V-3.5 PAGE 30 OF 208 RELISION 7 ATTACHMENT 2 TCN 7-16

UNIT 2 10/16/91 Inservice Testing Program for Valves San Onofre Nuclear Generating Station
(Test Org's: M=Maintenance, O = Operations, T = Technical)
Discussion of Cold Shutdown Intervals, See Next Att.

Code XI Class Ca	ec I Size at (in.)	Valve and Actuator Type	Norm Pos.	Test Type and Mode	Str. Time	Test Organization (Procedure)	Notes and Valve Relief Requests
** System	m: Auxil	iary Feedw	water				
* 2HV470	05, AFW	Control Va	lve -	- Steam	Genera	ator E088	
3 B	6	E-3) Valve GL/MO GL/MO GL/MO	C	BTC/OP BTO/OP	33.5 35	O(SO23-3-3.30) O(SO23-3-3.30) O(SO23-3-3.30)	3,4&6 3,4&6 3,4&6
* 2HV470	06, AFW	Control Va	lve ·	- Steam	Genera	ator E089	
3 B	6	D-3) Valve GL/MO GL/MO GL/MO	C	BTC/OP	33.5 35		3,4%6 3,4%6 3,4%6
* 2HV47	12, AFW	Pump 2P504	Disc	charge to	Ste	am Generators	
3 B	4	GL/MO	C	BTC/OP BTO/OP	36	O(SO23-3-3.30) O(SO23-3-3.30) O(SO23-3-3.30)	3&6 3&6 3&6
* 2HV47	13, AFW	Pump 2P141	Disc	charge to	Stea	am Generators	
3 B 3 B	4	B-3) Valve GL/MO GL/MO GL/MO	C	BTC/OP BTO/OP	36 36	0(S023-3-3.30) 0(S023-3-3.30) 0(S023-3-3.30)	3&6 3&6 3&6
						nerator E088	
2 B 2 B 2 B 2 B	6 6 6	F-1) Valve GL/EH GL/EH GL/EH GL/EH	C C C	BTC/OP BTO/OP FSTC/OP PIT/RR	10 10	0(S023-3-3.30) 0(S023-3-3.30) 0(S023-3-3.30) 0(S023-3-3.30)	3 3 3 3
* 2HV47	15, AFW	Isolation	Valve	e to Ste	am Ger	nerator E089	
2 B 2 B	6	D-2) Valve GL/MO GL/MO GL/MO	C	BTC/OP BTO/OP	10 10	0(\$023-3-3.30) 0(\$023-3-3.30) 0(\$023-3-3.30)	3,4&6 3,4&6 3,4&6

ENGINEERING PROCEDURE S023-V-3.5 PAGE 31 OF 208 REVISION 7 ATTACHMENT 2 TCN 7-16

UNIT 2

10/16/91

Inservice Testing Program for Valves
San Onofre Nuclear Generating Station

(Test Org's: M=Maintenance, 0 = Operations, T = Technical)
Discussion of Cold Shutdown Intervals, See Next Att.

Sec Code XI Class Cat	Valve and Size Actuator (in.) Type	Test Type Norm and Pos. Mode	Test Str. Organizati Time (Procedure	Notes and Valve on Relief) Requests
1 Day . 60	AFW Pump Turbi 1608/E-3) Valve 4 GA/MO 4 GA/MO	Wen . Cimpa	hrottle Valve 1 Inc. 13.5 O(SO23-3-3 O(SO23-3-3	.30) 3,4&6 .30) 3,4&6
1 Day . AD	TENA/E 21 Value	MEA . WKM	10 O(SO23-3-3 10 O(SO23-3-3 0(SO23-3-3	
* 2HV4731,	AFW Isolation	Valve to Ster	m Generator EO8	9
10wn - 40	E/H Bypass Val 0160A/F-3) Valve 4 GL/EH 4 GL/EH 4 GL/EH	Mfa . Conti	alve 2HV4712 rol Components 40 O(SO23-3-3 O(SO23-3-3 O(SO23-3-3	.30) 3 .30)
* 2HV4763, (Dwg.: 40	E/H Bypass Val 0160A/C-3) Valve	ve for AFW V		(30) 3
* S21305MU	0121 (6-121-0-59	98), AFW Pump	2P140 Supply to	Steam Generator E089
(Dwg.: 40	0160A/D-3) Valve 6 CK/SA	Mfg.: Anch	or/Darling 0,5023-3-	3.31.2) 5
(Dwg.: 40	0160A/B-4) Valve	e Mfg.: Anch	2P141 Discharge or/Darling O(S023-3-	

TCN 7-16

UNIT 2 10/16/91

Inservice Testing Program for Valves San Onofre Nuclear Generating Station (Test Org's: M=Maintenance, O = Operations, T = Technical)
Discussion of Cold Shutdown Intervals, See Next Att.

Code Class	Sec XI S Cat (ize in.)	Valve and Actuator Type	Norm Pos.	Test Type and Mode	Str. Time	Test Organizatio (Procedure)	on)	Notes a Valve Relief Request	
(Dwn	. 401	SOA/G	-4) Valve	Mfa.	: Anch	or/Dar	Discharge			
3	C 6		CK/SA	C	CVTO/CS		0(5023-3-3	.31.2)	5	
* S213	305MU5	47 (6 60A/F	-547-D-59	8), A	AFW Pump	2P140 or/Dar	Discharge	Check	Valve	
3	C 6	oon, c	CK/SA	C	CVTO/CS		0(5023-3-3	.31.2)	5	
** Sys	tem: B	oric	Acid Make	eup						
* 2FV	9253,	Makeu	p Water t	o Vo	ume Con	trol 1	Tank			
3 (Dwg	B 3	25B/G	-2) Valve	C mrg.	BTC/OP	2	0(5023-3-3	.30)		
3	B 3		GL/AO	C	FSTC/OP		0(S023-3-3 0(S023-3-3 0(S023-3-3	.30)		
(Dur	. 401	25A/D	-RI Valve	Mfo	· ITT		circulation		nk T072	
3	B 2	E Orly D	GL/AO	C	BTC/OP	2	0(5023-3-3	.30)		
3	B 2		GL/AO	C	FSTC/OP PIT/RR		0(S023-3-3 0(S023-3-3 0(S023-3-3	.30)		
							to Charging		Suction	
(Dwo	.: 401	25A/B	-5) Valve	Mfa.	.: Tarq	et Ro	ck			
3	B 3		GA/MO	C	BTO/CS	12	0(5023-3-3	.31)	5&6	
3	B 3		GA/MU	-	P11/KK		0(5023-3-3	.31)	240	
			Acid Mai			74 Re	circulation	to Ta	nk T071	
3	B 2		GL/AO	C	BTC/OP	2	0(5023-3-3	.30)		
3	B 2		GL/AO	C	FSTC/OP		0(S023-3-3 0(S023-3-3	.30)		
3	B S		GL/AU	L	P11/KK		0(5023-3-3	.30)		
			Tank TO7:				Suction He	ader C	ontrol V	alve
3	B 3	LUM/D	GA/MO	C	BTO/CS	12	0(5023-3-3	.31)	5&6	
3	8 3		GA/MO	C	PIT/RR		0(S023-3-3 0(S023-3-3	.31)	5&6	

UNIT 2 10/16/91

Inservice Testing Program for Valves San Onofre Nuclear Generating Station (Test Org's: M=Maintenance, O = Operations, T = Technical)
Discussion of Cold Shutdown Intervals, See Next Att.

Code Class	VI Ciro	and Actuator Norm	Test Type and Str. Mode Time	Test Organization (Procedure)	Notes and Valve Relief Requests
* 2HV (Dwg 3 3	. 40125R/	F-5) Valve Mfo	.: Target Ro	ion Control Valve ck O(S023-3-3.31) O(S023-3-3.31)	5&6 5&6
(Dwg	.: 40125B/	B-5) Valve Mfg	.: Aloyco/Wa	75 Discharge Check lworth O(SO23-3-3.31.2)	Valve
(Dwg	.: 40125B/	D-5) Valve Mfc	.: Aloyco/Wa	74 Lischarge Check 1worth 0(S023-3-3.31.2)	(Valve
(Dwg	.: 40125B/	G-3) Valve Mfc	.: Aloyco/Wa	Water to Boric Ad lworth T(S023-V-3.5.4)	id Mixing Tee
** Sys	tem: Chemi	cal and Volume	Control		
/ Dwa	· 401234/	D-31 Valve Mfc	Fisher	Heat Exchanger EO	
2 2 2 2 2	A 2 A 2 A 2 A 2 A 2	GL/AO O GL/AO O GL/AO O GL/AO O GL/AO O	AT/RR BTC/CS 8 BTO/CS 25 FSTO/CS PIT/RR	T(S023-V-3.13) O(S023-3-3.31) O(S023-3-3.31) O(S023-3-3.31) O(S023-3-3.31)	5&10 5&10 5&10 5&10 5&10
* 2HV	9205, Reg€	enerative Heat	Exchanger to	Letdown Heat Excha	anger
2 2	A 2 A 2	(F-3) Valve Mfg GL/AO O GL/AO O GL/AO O GL/AO O	AT/RR BTC/CS 4	T(S023-V-3.13) 0(S023-3-3.31) 0(S023-3-3.31) 0(S023-3-3.31)	3,5&10
		Outlet Valve (B-5) Valve Mfg GA/MO O GA/MO O		0(\$023-3-3.31) 0(\$023-3-3.31)	5&6 5&6

UNIT 2
10/16/91

Inservice Testing Program for Valves
San Onofre Nuclear Generating Station
(Test Org's: M=Maintenance, O = Operations, T = Technical)
Discussion of Cold Shutdown Intervals, See Next Att.

Code Class	Sec XI Size Cat (in.)	Valve and Actuator Norm Type Pos.	Type and Str.	Test Organization (Procedure)	Notes and Valve Relief Requests
		own Containment F-3) Valve Mfg GA/MO O GA/MO O GA/MO O		alve use, Inc. T(S023-V-3.13) O(S023-3-3.31) O(S023-3-3.31)	3,5,6&10 3,5,6&10 3,5,6&10
(Dwg	.: 40124A/	B-4) Valve Mfg	.: Aloyco/Wa	ng Pump Suction C lworth O(SO23-3-3.31.2)	heck Valve
* S21 (Dwg 2	208MU017 (.: 40124B/ C 2	2-017-C-554), C-3) Valve Mfg CK/SA C	Charging Pump .: Kerotes: CVTO/OP	2P192 Discharge T(S023-V-3.5.4)	Check Valve
* \$21 (Dwg 2	208MU067 (.: 40124B/ C 2	2-067-C-554), G-2) Valve Mfg CK/SA C	Charging Pump .: Kerotest CVTO/OP	2P190 Discharge T(S023-V-3.5.4)	Check Valve
(Dwg	.: 40124B/	D-2) Valve Mfg	.: Kerotest	2P191 Discharge T(S023-V-3.5.4)	Check Valve
(Dwg	.: 401248/	H-5) Valve Mfg	Suction .: Aloyco/Wa	eed - BAMU Tanks lworth O(SO23-3-3.31.2)	
(Dwg	.: 40124B/	F-7) Valve Mfg	.: Aloyco/Wa	Charging Pumps S Nworth O(SO23-3-3.31.2)	
(Dec	: 40123A/	Exchanger E (D-4) Valve Mfo	063 .: Kerotest	T(U023-V-3.13) T(S023-V-3.13) T(S023-V-3.5.4)	.

ATTACHMENT 2 TCN 7-16

UNIT 2 10/16/91

Inservice Testing Program for Valves
San Onofre Nuclear Generating Station
(Test Org's: M=Maintenance, 0 = Operations, T = Technical)
Discussion of Cold Shutdown Intervals, See Next Att.

Code Class	Sec XI Cat	Size (in.)	Valve and Actuator Type	Norm	Type	Str. Time	Test Organization (Procedure)	Notes and Valve Relief Requests
* S21208MU130 (2-130-C-334), Contmt Isol - Chg Pump Disch to Aux Spray Regen HX Bypass (Dwg.: 40123A/B-2) Valve Mfg.: Kerotest								
2 2 2 2 2	.: 40 A A A	2 2 2 2 2	GL/M GL/M GL/M GL/M	C C C	AT/RR BTC/CS BTO/CS PIT/RR	test	T(S023-V-3.13) 0(S023-3-3.31) 0(S023-3-3.31) 0(S023-3-3.31)	7&10 7&10 7&10 7&10
** System: Chilled Water								
* 2HV9900, Containment Cooling Supply Isolation Valve Penetration 45 (Dwg.: 40170A/G-4) Valve Mfg.: Fisher								
2 2 2	AAAA	8 8 8	BTF/MO BTF/MO BTF/MO	0 0	AT/RR BTC/OP PIT/RR	14	T(S023-V-3.13) 0(S023-3-3.30) 0(S023-3-3.30)	3,6&10 3,6&10 3,6&10
* 2HV9920, Containment Isolation Valve - Cooling Supply (Dwg.: 40170A/G-3) Valve Hfg.: Fisher								
2 2 2 2	AAAAA	8 8 8 8	BTF/AO BTF/AO BTF/AO BTF/AO	0 0 0	AT/RR BTC/OP FSTC/OP PIT/RR	12	T(S023-V-3.13) 0(S023-3-3.30) 0(S023-3-3.30) 0(S023-3-3.30)	3&10 3&10 3&10 3&10
* 2HV9921, Containment Isolation Valve - Cooling Return (Dwg.: 40170A/F-3) Valve Mfg.: Fisher								
2 2 2 2 2	.: A A A A	8 8 8 8	BTF/AO BTF/AO BTF/AO BTF/AO	0 0 0 0	AT/RR BTC/OP FSTC/OP PIT/RR	er 26	T(S023-V-3.13) 0(S023-3-3.30) 0(S023-3-3.30) 0(S023-3-3.30)	3&10 3&10 3&10 3&10
* 2HV9971, Containment Isolation Valve - Cooling Return, Pen 46 (Dwg.: 40170A/F-4) Valve Mfg.: Fisher								
2 2 2	AAAA	8 8 8	The second secon	00	AT/RR		T(S023-V-3.13) O(S023-3-3.30) O(S023-3-3.30)	3,6&10 3,6&10 3,6&10
* SA1513MU830, (1 1/8-830-D-*), Aux Bldg Emerg Chiller E336 Oil Cooler Outlet Check Valve								
(Dwg	.: 4 C	0179E/ 1-1/8	G-7) Valv CK/SA	e Mfg	.1		0(\$023-3-3.20)	

Discus	sion of Cold Si	nutdown interv	ais, see next mi	4.
Sec Code XI Size Class Cat (in.)	Valve and Actuator Norm Type Pos.	Type and Str.	Test Organization (Procedure)	Notes and Valve Relief Requests
* SA1513MU835	(1 1/8-835-1 Outlet Chec		g Emerg Chiller E	335 Oil Cooler
(Dwg.: 40180D/ 3 C 1-1/8			0(\$023-3-3.20)	
** System: Compo	nent Cooling W	ater		
* 2HCV6537, CCW (Dwg.: 40127A/	The state of the s			
(Dwg.: 40127A/ 3 B 10 3 B 10 3 B 10	BTF/AO O BTF/AO O BTF/AO O	BTC/OP 5 FSTC/OP PIT/RR	O(\$023-3-3.30) O(\$023-3-3.30) O(\$023-3-3.30)	
* 2HCV6538, CCW	Pump 2P025 Min	niflow Block	/alve	
3 B 10 3 B 10 3 B 10	BTF/AO O BTF/AO O BTF/AO O	BTC/OP 5 FSTC/OP PIT/RR	O(S023-3-3.30) O(S023-3-3.30) O(S023-3-3.30)	
* 2HCV6539, CCW (Dwg : 40127A/			/alve	
3 B 10 3 b 10 3 B 10	BTF/AO O BTF/AO O BTF/AO O	BTC/OP 5 FSTC/OP PIT/RR	O(S023-3-3.30) O(S023-3-3.30) O(S023-3-3.30)	
(Dwg . 40127F/	G-31 Value Mfn	Fisher	CW Non-Critical L	
2 A 10 2 A 10 2 A 10	BTF/MO O BTF/MO O BTF/MO O	AT/RR BTC/CS 15 PIT/RR	T(S023-V-3.13) O(S023-3-3.31) O(S023-3-3.31)	3,5,6&10 3,5,6&10 3,5,6&10
* 2HV6212, CCW (Dwg.: 40127D/	from Heat Exch E-7) Valve Mfg	anger E001A to	Non-Critical Lo	оор
3 B 28	BTF/AO O BTF/AO O BTF/AO O	BTC/CS 13 FSTC/CS	0(S023-3-3.31) 0(S023-3-3.31) 0(S023-3-3.31)	14 14 14
* 2HV6213, Comp	onent Cooling D-7) Valve Mfg	Discharge to I	Non-Critical Loop	
3 B 28	BTF/AO O BTF/AO O	BTC/CS 14	O(SO23-3-3.31) O(SO23-3-3.31) O(SO23-3-3.31)	14 14 14 PAGE 9 OF 52

Code	Sec XI Size Cat (in.)		n and Str.	Test Organization (Procedure)	Notes and Valve Relief Requests
* 2HV	6216, Cont	tainment Isolat (C-5) Valve Mfg	ion - CCW Non	-Critical Loop Ret	urn
2 2	A 10 A 10	BTF/MO O	AT/RR BTC/CS 15	T(S023-V-?.13) O(S023-3-3.31) O(S023-3-3.31)	3,5,6&10 3,5,6&10 3,5,6&10
* 2HV	6218, Comp	conent Cooling	Water Pump Su	ction From Non-Cri	tical Loop
3	B 28 B 28 B 28	/E-7) Valve Mfg BTF/AO G BTF/AO O BTF/AO O	BTC/CS 16 FSTC/CS	O(SO23-3-3.31) O(SO23-3-3.31) O(SO23-3-3.31)	5&14 5&14 5&14
* 2HV	6219, Com	ponent Cooling /D-7) Valve Mfg	Water Pump Su	ction From Non-Cri	tical Loop
3 3 3	B 28 B 28 B 28	BTF/AO O BTF/AO O BTF/AO O	BTC/CS 16 FSTC/CS PIT/RR	O(SO23-3-3.31) O(SO23-3-3.31) O(SO23-3-3.31)	5&14 5&14 5&14
* 2HV	6223, Con	tainment Isola	tion - CCW Non	-Critical Loop Sup	ply
2 2	A 10 A 10	/G-4) Valve Mfo BTF/MO O BTF/MO O BTF/MO O	AT/RR BTC/CS 15	T(:023-V-3.13) C(S023-3-3.31) O(S023-3-3.31)	3,5,6&10 3,5,6&10 3,5,6&10
				-Critical Loop Ret	urn
2 2	A 10 A 10 A 10	/C-6, Valve Mf BTF/MO O BTF/MO O BTF/MO O	AT/RR BTC/CS 15 PIT/RR	T(\$023-V-3.13) O(\$023-3-3.31) O(\$023-3-3.31)	3,5,6&10 3,5,6&10 3,5,6&10
				gency Coung Unit	E-401
2	A 10	/C-7) Valve Mf GA/MO O GA/MO D GA/MO O GA/MO O	AT/PR	T(S023-V-3.13) 0(S023-3-0.30) 0(S023-3-3.30) 0(S023-3-3.30)	3,6&10 3,6&10 3,6&10 3,6&10

* 2HV6367, Component Cooling Water to Emergency Cooling Unit E-401 (Dwg.: 40172B/D-7) Valve Mfg.: WKM 2	Code Class	Sec XI Cat	Size	Valve and Actuator Type	Norm	Test Type and Mode	Str. Time	Test Organization (Procedure)	Notes and Valve Relief Requests
2 A 10 GA/MO C BTC/OP 12 O(SO23-3-3.30) 3.6&10 2 A 10 GA/MO C BTC/OP 12 O(SO23-3-3.30) 3.6&10 2 A 10 GA/MO C BTO/OP 12 O(SO23-3-3.30) 3.6&10 2 A 10 GA/MO C PIT/RR O(SO23-3-3.30) 3.6&10 * 2HV6368, Component Cooling Water to Emergency Cooling Unit E-400 (Owg.: 401728/E-7) Valve Mfg.: WKM 2 A 10 GA/MO O AT/RR T(SC23-V-3.13) 3.6&10 2 A 10 GA/MO O BTC/OP 12 O(SO23-3-3.30) 3.6&10 2 A 10 GA/MO O BTC/OP 12 O(SO23-3-3.30) 3.6&10 2 A 10 GA/MO O PIT/RR O(SO23-3-3.30) 3.6&10 2 A 10 GA/MO O PIT/RR O(SO23-3-3.30) 3.6&10 2 A 10 GA/MO C AT/RR T(SO23-V-3.13) 3.6&10 2 A 10 GA/MO C BTC/OP 12 O(SO23-3-3.30) 3.6&10 2 A 10 GA/MO C BTC/OP 12 O(SO23-3-3.30) 3.6&10 2 A 10 GA/MO C BTC/OP 12 O(SO23-3-3.30) 3.6&10 2 A 10 GA/MO C BTC/OP 12 O(SO23-3-3.30) 3.6&10 2 A 10 GA/MO C BTC/OP 12 O(SO23-3-3.30) 3.6&10 2 A 10 GA/MO C BTC/OP 12 O(SO23-3-3.30) 3.6&10 2 A 10 GA/MO C BTC/OP 12 O(SO23-3-3.30) 3.6&10 2 A 10 GA/MO C BTC/OP 12 O(SO23-3-3.30) 3.6&10 2 A 10 GA/MO O BTC/OP 12 O(SO23-3-3.30) 3.6&10 2 A 10 GA/MO O BTC/OP 12 O(SO23-3-3.30) 3.6&10 2 A 10 GA/MO O BTC/OP 12 O(SO23-3-3.30) 3.6&10 2 A 10 GA/MO O BTC/OP 12 O(SO23-3-3.30) 3.6&10 2 A 10 GA/MO O BTC/OP 12 O(SO23-3-3.30) 3.6&10 2 A 10 GA/MO O BTC/OP 12 O(SO23-3-3.30) 3.6&10 2 A 10 GA/MO O BTC/OP 12 O(SO23-3-3.30) 3.6&10 2 A 10 GA/MO O BTC/OP 12 O(SO23-3-3.30) 3.6&10 2 A 10 GA/MO C BTC/OP 12 O(SO23-3-3.30) 3.6&10 2 A 10 GA/MO C BTC/OP 12 O(SO23-3-3.30) 3.6&10 2 A 10 GA/MO C BTC/OP 12 O(SO23-3-3.30) 3.6&10 2 A 10 GA/MO C BTC/OP 12 O(SO23-3-3.30) 3.6&10 2 A 10 GA/MO C BTC/OP 12 O(SO23-3-3.30) 3.6&10 2 A 10 GA/MO C BTC/OP 12 O(SO23-3-3.30) 3.6&10 2 A 10 GA/MO C BTC/OP 12 O(SO23-3-3.30) 3.6&10 2 A 10 GA/MO C BTC/OP 12 O(SO23-3-3.30) 3.6&10 2 A 10 GA/MO C BTC/OP 12 O(SO23-3-3.30) 3.6&10 2 A 10 GA/MO C BTC/OP 12 O(SO23-3-3.30) 3.6&10 2 A 10 GA/MO C BTC/OP 12 O(SO23-3-3.30) 3.6&10 3 A 10 GA/MO C BTC/OP 12 O(SO23-3-3.30) 3.6&10 3 A 10 GA/MO C BTC/OP 12 O(SO23-3-3.30) 3.6&10 3 A 10 GA/MO O BTC/OP 12 O(SO23-3-3.30) 3.6&10 3 A 10 GA/MO O BTC/OP 12 O(SO23-3-3.30) 3.6&10 3 A 10 GA/MO O BTC/OP 12 O(SO23-3	* 2HV	6367,	Compo	onent Cool	ing I	water to	Emer	gency Cooling Unit	E-401
(Dwg.: 40172B/E-7) Valve Mfg.: WKM 2	2	AAA	10	GA/MO GA/MO	C	AT/RR BTC/OP	12	0(S023-3-3.30) 0(S023-3-3.30)	3,6&10 3,6&10
2 A 10 GA/MO O BTC/OP 12 O(SO23-3-3.30) 3,6&10 2 A 10 GA/MO O BTC/OP 12 O(SO23-3-3.30) 3,6&10 2 A 10 GA/MO O BTO/OP 12 O(SO23-3-3.30) 3,6&10 2 A 10 GA/MO O BTO/OP 12 O(SO23-3-3.30) 3,6&10 2 A 10 GA/MO O PIT/RR O(SO23-3-3.30) 3,6&10 * 2HV6369, Component Cooling Water to Emergency Cooling Unit E-400 (Dwg.: 40172B/F-7) Valve Mfg.: WKM 2 A 10 GA/MO C BTC/OP 12 O(SO23-3-3.30) 3,6&10 2 A 10 GA/MO C BTO/OP 12 O(SO23-3-3.30) 3,6&10 2 A 10 GA/MO C BTO/OP 12 O(SO23-3-3.30) 3,6&10 2 A 10 GA/MO C PIT/RR O(SO23-3-3.30) 3,6&10 * 2HV6370, Component Cooling Water to Emergency Cooling Unit E-399 (Dwg.: 40172B/D-2) Valve Mfg.: WKM 2 A 10 GA/MO O AT/RR T(SO23-V-3.13) 3,6&10 2 A 10 GA/MO O BTC/OP 12 O(SO23-3-3.30) 3,6&10 2 A 10 GA/MO O BTC/OP 12 O(SO23-3-3.30) 3,6&10 2 A 10 GA/MO O BTO/OP 12 O(SO23-3-3.30) 3,6&10 2 A 10 GA/MO O BTO/OP 12 O(SO23-3-3.30) 3,6&10 2 A 10 GA/MO O BTO/OP 12 O(SO23-3-3.30) 3,6&10 2 A 10 GA/MO C BTO/OP 12 O(SO23-3-3.30) 3,6&10 2 A 10 GA/MO C BTO/OP 12 O(SO23-3-3.30) 3,6&10 2 A 10 GA/MO C BTO/OP 12 O(SO23-3-3.30) 3,6&10 2 A 10 GA/MO C BTO/OP 12 O(SO23-3-3.30) 3,6&10 2 A 10 GA/MO C BTO/OP 12 O(SO23-3-3.30) 3,6&10 2 A 10 GA/MO C BTO/OP 12 O(SO23-3-3.30) 3,6&10 2 A 10 GA/MO C BTO/OP 12 O(SO23-3-3.30) 3,6&10 2 A 10 GA/MO C BTO/OP 12 O(SO23-3-3.30) 3,6&10 2 A 10 GA/MO C BTO/OP 12 O(SO23-3-3.30) 3,6&10 2 A 10 GA/MO C BTO/OP 12 O(SO23-3-3.30) 3,6&10 3 A 10 GA/MO C BTO/OP 12 O(SO23-3-3.30) 3,6&10 4 2HV6372, Component Cooling Water to Emergency Cooling Unit E-402 (Dwg.: 40172B/F-2) Valve Mfg.: WKM 2 A 10 GA/MO O BTO/OP 12 O(SO23-3-3.30) 3,6&10 3 A 10 GA/MO O BTO/OP 12 O(SO23-3-3.30) 3,6&10 3 A 10 GA/MO O BTO/OP 12 O(SO23-3-3.30) 3,6&10 3 A 10 GA/MO O BTO/OP 12 O(SO23-3-3.30) 3,6&10 3 A 10 GA/MO O BTO/OP 12 O(SO23-3-3.30) 3,6&10 3 A 10 GA/MO O BTO/OP 12 O(SO23-3-3.30) 3,6&10 3 A 10 GA/MO O BTO/OP 12 O(SO23-3-3.30) 3,6&10 3 A 10 GA/MO O BTO/OP 12 O(SO23-3-3.30) 3,6&10 3 A 10 GA/MO O BTO/OP 12 O(SO23-3-3.30) 3,6&10	* 2HV	6368,	Compo	onent Cool	ing i	water to	Emer	gency Cooling Unit	E-400
(Dwg.: 401728/F-7) Valve Mfg.: WKM 2	(Dwg 2 2 2	.: 40 A	172B/1	E-7) Valve GA/MO GA/MO	Mfg 0	AT/RR BTC/OP	12	T(SG23-V-3.13) O(SO23-3-3.30) O(SO23-3-3.30)	3,6&10 3,6&10 3,6&10
2 A 10 GA/MO C BTC/OP 12 O(SO23-3-3.30) 3,6&10 2 A 10 GA/MO C BTO/OP 12 O(SO23-3-3.30) 3,6&10 2 A 10 GA/MO C BTO/OP 12 O(SO23-3-3.30) 3,6&10 2 A 10 GA/MO C PIT/RR O(SO23-3-3.30) 3,6&10 2 A 10 GA/MO C PIT/RR O(SO23-3-3.30) 3,6&10 * 2HV6370, Component Cooling Water to Emergency Cooling Unit E-399 (Dwg.: 401728/D-2) Valve Mfg.: WKM 2 A 10 GA/MO O AT/RR T(SO23-V-3.13) 3,6&10 2 A 10 GA/MO O BTC/OP 12 O(SO23-3-3.30) 3,6&10 2 A 10 GA/MO O BTO/OP 12 O(SO23-3-3.30) 3,6&10 2 A 10 GA/MO O PIT/RR O(SO23-3-3.30) 3,6&10 2 A 10 GA/MO O PIT/RR TO(SO23-3-3.30) 3,6&10 2 A 10 GA/MO C AT/RR T(SO23-V-3.13) 3,6&10 2 A 10 GA/MO C BTC/OP 12 O(SO23-3-3.30) 3,6&10 2 A 10 GA/MO C BTC/OP 12 O(SO23-3-3.30) 3,6&10 2 A 10 GA/MO C BTC/OP 12 O(SO23-3-3.30) 3,6&10 2 A 10 GA/MO C BTD/OP 12 O(SO23-3-3.30) 3,6&10 2 A 10 GA/MO C BTD/OP 12 O(SO23-3-3.30) 3,6&10 2 A 10 GA/MO C BTD/OP 12 O(SO23-3-3.30) 3,6&10 3 A 10 GA/MO C BTD/OP 12 O(SO23-3-3.30) 3,6&10 4 CHV6372, Component Cooling Water to Emergency Cooling Unit E-402 (Dwg.: 401728/F-2) Valve Mfg.: WKM 2 A 10 GA/MO O BTD/OP 12 O(SO23-3-3.30) 3,6&10 4 CHV6372, Component Cooling Water to Emergency Cooling Unit E-402 (Dwg.: 40172B/F-2) Valve Mfg.: WKM 2 A 10 GA/MO O BTD/OP 12 O(SO23-3-3.30) 3,6&10 3 A 10 GA/MO O BTD/OP 12 O(SO23-3-3.30) 3,6&10 3 A 10 GA/MO O BTD/OP 12 O(SO23-3-3.30) 3,6&10 3 A 10 GA/MO O BTD/OP 12 O(SO23-3-3.30) 3,6&10 3 A 10 GA/MO O BTD/OP 12 O(SO23-3-3.30) 3,6&10 3 A 10 GA/MO O BTD/OP 12 O(SO23-3-3.30) 3,6&10 3 A 10 GA/MO O BTD/OP 12 O(SO23-3-3.30) 3,6&10	* 2HV	6369,	Compo	onent Cool	ing I	water to	Emer	gency Cooling Unit	E-400
(Dwg.: 401728/D-2) Valve Mfg.: WKM 2	5 5	AAAA	10 10 10	GA/MO GA/MO GA/MO	CCC	AT/RR BTC/OP BTO/OP		O(SO23-3-3.30) O(SO23-3-3.30)	3,6&10 3,6&10
2 A 10 GA/MO O AT/RR T(SO23-V-3.13) 3,6&10 2 A 10 GA/MO O BTC/OP 12 O(SO23-3-3.30) 3,6&10 2 A 10 GA/MO O BTO/OP 12 O(SO23-3-3.30) 3,6&10 2 A 10 GA/MO O PIT/RR O(SO23-3-3.30) 3,6&10 * 2HV6371, Component Cooling Water Ret. from Emerg Cooling Unit E-399 (Dwg.: 401728/C-2) Valve Mfg.: WkM 2 A 10 GA/MO C AT/RR T(SO23-V-3.13) 3,6&10 2 A 10 GA/MO C BTC/OP 12 O(SO23-3-3.30) 3,6&10 2 A 10 GA/MO C BTD/OP 12 O(SO23-3-3.30) 3,6&10 2 A 10 GA/MO C PIT/RR O(SO23-3-3.30) 3,6&10 2 A 10 GA/MO C PIT/RR O(SO23-3-3.30) 3,6&10 2 A 10 GA/MO C PIT/RR O(SO23-3-3.30) 3,6&10 2 A 10 GA/MO O AT/RR T(SO23-V-3.13) 3,6A10 2 A 10 GA/MO O BTC/OP 12 O(SO23-3-3.30) 3,6&10 2 A 10 GA/MO O BTC/OP 12 O(SO23-3-3.30) 3,6&10 3 A 10 GA/MO O BTC/OP 12 O(SO23-3-3.30) 3,6&10 3 A 10 GA/MO O BTC/OP 12 O(SO23-3-3.30) 3,6&10 3 A 10 GA/MO O BTC/OP 12 O(SO23-3-3.30) 3,6&10							Emer	gency Cooling Unit	E-399
(Dwg.: 401728/C-2) Valve Mfg.: WkM 2	2 2 2	AAA	10 10 10	GA/MO GA/MO GA/MO	000	AT/RR BTC/OP BTO/OP	12	0(S023-3-3.30) 0(S023-3-3.30)	3,6&10 3,6&10
2 A 10 GA/MO C AT/RR T(SO23-V-3.13) 3,6&10 2 A 10 GA/MO C BTC/OP 12 O(SO23-3-3.30) 3,6&10 2 A 10 GA/MO C BTO/OP 12 O(SO23-3-3.30) 3,6&10 2 A 10 GA/MO C PIT/RR O(SO23-3-3.30) 3,6&10 * 2HV6372, Component Cooling Water to Emergency Cooling Unit E-402 (Dwg.: 40172B/F-2) Valve Mfg.: WKM 2 A 10 GA/MO O AT/RR T(SO23-V-3.13) 3,6&10 2 A 10 GA/MO O BTC/OP 12 O(SO23-3-3.30) 3,6&10 2 A 10 GA/MO O BTD/OP 12 O(SO23-3-3.30) 3,6&10								om Emerg Cooling U	nit E-399
(Dwg.: 40172B/F-2) Valve Mfg.: WKM 2 A 10 GA/MO O AT/RR T(S023-V-3.13) 3,6&10 2 A 10 GA/MO O BTC/OP 12 0(S023-3-3.30) 3,6&10 2 A 10 GA/MO O BTD/OP 12 0(S023-3-3.30) 3,6&10	2 2	AAA	10 10 10	GA/MO GA/MO GA/MO	CCC	AT/RR BTC/OP BTO/OP	12	0(S023-3-3.30) 0(S023-3-3.30)	3,6&10 3,6&10
2 A 10 GA/MO 0 AT/RR T(SO23-V-3.13) 3,6%10 2 A 10 GA/MO 0 BTC/OP 12 0(SO23-3-3.30) 3,6%10 2 A 10 GA/MO 0 BTO/OP 12 0(SO23-3-3.30) 3,6%10	* 2HV	6372,	Comp	onent Coo	ling	Water to	Emer	gency Cooling Unit	E-402
		AAA	10 10 10	GA/MO GA/MO GA/MO	0	AT/RR BTC,'OP BTO/OP		0(S023-3-3.30) 0(S023-3-3.30)	3,6810

ENGINEERING PROCEDURE S023-V-3.5
REVISION 7 PAGE 39 OF 208
ATTACHMENT 2
TCN 7=16

UNIT 2 10/16/91

Sec Code XI Size Class Cat (in.)	Valve and Actuator Norm Type Pos.	Type and St	Test r. Organization me (Procedure)	Notes and Valve Relief Requests
* 2HV6373, Comp	onent Cooling	Water to Em	ergency Cooling Unit	E-402
(Dwg.: 40172B/ 2 A 10 2 A 10 2 A 10 2 A 10	GA/MO C GA/MO C GA/MO C GA/MO C	AT/RR BTC/OF 12 BTO/OP 12 PIT/RR	T(S023 V-3.13) 0(S023-3-3.30) 0(S023-3-3.30) 0(S023-3-3.30)	3,6&10 3,6&10 3,6&10 3,6&10
/Dun . A01975/	E Al Value Men	. Fichan	SDCS Heat Exchanger	
3 B 18 3 B 18 3 B 18	BTF/AO C BTF/AO C BTF/AO C	BTO/CS 8 FSTO/CS PII/RR	0(S023-3-3.31) 0(S023-3-3.31) 0(S023-3-3.31)	3&5 3&5 3&5
			SDCS Heat Exchanger	E004
(Dwg.: 40127E/ 3 B 18 3 B 18 3 B 18	BTF/AO C BTF/AO C	BTO/CS 8 FSTO/CS PIT/RR	0(S023-3-3.31) 0(S023-3-3.31) 0(S023-3-3.31)	3&5 3&5 3&5
* 2PSV6356, CCW				
(Dwg.: 40127B/	SV/SA C	RVT/RR	M(S023-I-8.88)	2
* 2PSV6359, CCW				
(Dwg.: 40127B/			M(S023-I-8.88)	2
* S21203MR229,			6 Drain Line	
(Dwg.: 40127A/	GATE/M C	BTO/OP	O(Later)	7

ENGINEERING PROCEDURE SO23-V-3.5 REVISION 7 ATTACHMENT 2 TCN 7-16

PAGE 40 OF 208

THIS PAGE LEFT

BLANK

INTENTIONALLY

ENGINEERING PROCEDURE S023-V-3.5
REVISION 7 PAGE 41 OF 208
ATTACHMENT 2
TCN 7-16

UKIT 2 10/16/91

Code Class	Sec XI Size Cat (in.)	Valve and Actuator Norm Type Pos.	Test Type and Str. Mode Time	Test Organization (Procedure)	Notes and Valve Relief Requests
* S21 (Dwg	203MR232, .: 40127A/ B 1	Drain Valve, CC D-6) Valve Mfg. GATE/M C	W Pump PO25 : Vogt BTO/OP	Drain Line O(Later)	7
(Dwg	.: 40127A/	Drain Valve, CC G-5) Valve Mfg. GATE/M C	: Vogt		7
f Dwc	.: 40127A/	G-4) Valve Mfg.	: TRW/Missi	24 Discharge Check on T(SO23-V-3.5.4) O(SO23-3-3.31.2) O(SO23-3-3.31.2)	Valve
(Dwg 3 3	.: 40127A/ C 28 C 28	B-4) Valve Mfg SDCK/SA OC SDCK/SA OC	.: TRW/Missi CVPO/OP CVTC/CS	26 Discharge Check on T(SO23-V-3.5.4) O(SO23-3-3.31.2) O(SO23-3-3.31.2)	Valve
(Dwg	.: 40127A/ C 28	D-4) Valve Mfg SDCK/SA OC	.: TRW/Missi CVPO/OP	25 Discharge Check on T(S023-V-3.5.4) O(S023-3-3.31.2) O(S023-3-3.31.2)	Valve
* S21	203MU264	(1-264-D-62) Water Surge	7), Nitrogen Tank TOO3A	T(SO23-SPT-2) T(SO23-SPT-2)	t Cooling
(Dwg	.: 40127B/	Water Surge (G-5) Valve Mfg CK/SA C	Tank T003A : Kerotest AT/RR	T(SO23-SPT-2) T(SO23-SPT-2)	13

Code Class	Sec XI Si Cat (i	Valve and ze Actuator n.) Type	Norm	Test Type and Mode	Str.	Test Organization (Procedure)		Notes and Valve Relief Requests	1
		Water	Surge	Tank 100	46	Supply to Compo	nent	Cooling	
3 0 0	AC 1 AC 1	78/D-5) Valv CK/SA CK/SA	e Mfg.	: Kerot AT/RR CVTC/RR	est	T(SO23-SPT-2) T(SO23-SPT-2)		13 13	
* 521	203MU26	7 (1-267 Water	-D-627 Surge), Nitro	igen :	Supply to Compo		Cooling	
(Dwg 3 3	AC 1	78/D-5) Valv CK/SA CK/SA	0	AT/RR		T(S023-SPT-2) T(S023-SPT-2)		13 13	
		LOOD A				ant Service W	ater	Supply t	o CCW
(Dwg 3 3	AC 1 AC 1	7B/D-3) Valv CK/SA CK/SA	e Mfg. C	: Ancho AT/RR CVTC/RR	or Dai	T(S023-SPT-2) T(S023-SPT-2)			
* S21	2038426	9 (1-269 Loop B), Nucle	ar P	lant Service W	ater	Supply t	o CCW
3 3 3	AC 1 AC 1	7B/B-3) Valv CK/SA CK/SA	e Mfg. C C	: Ancho AT/RR CVTC/RR	or Da	rling T(SO23-SPT-2) T(SO23-SPT-2)			
** Sys	tem: Co	ndensate and	Feedw	ater					
(Dwg	.: 4015	6B/B-6) Valv	e Mfg.	: Cope:	s Vul	n Generator E0 can, Inc. O(\$023-3-3.31 O(\$023-3-3.31 O(\$023-3-3.31		3 3 3	
	.: 4015	68/E-6) Valv	e Mfg.	: Cope:	s Vul	m Generator E0 can, Inc. 0(S023-3-3.31 0(S023-3-3.31 0(S023-3-3.31		3 3 3	

ENGINEERING PROCEDURE S023-V-3.5
REVISION 7 PAGE 43 OF 208
ATTACHMENT 2
TCN 7-16

UNIT 2 10/16/91

Code Class	Sec XI Cat	Size (in.)	Valve and Actuator Type	Norm Pos.	Test Type and Mode	Str. Time	Test Organization (Procedure)	Notes and Valve Relief Requests
			water Blo F-4) Valve			eam G	enerator E088	
(Dwg	B	20	GA/EH GA/EH	0	BTC/CS PIT/RR	10	O(SO23-3-3.31) O(SO23-3-3.31)	3&5 3&5
			water Iso F-2) Valve				am Generator E088	
2 2 2	BBBB	20 20 20	GA/EH GA/EH GA/EH	0 0 0	BTC/CS FSTC/CS PIT/RR	10	O(SO23-3-3.31) O(SO23-3-3.31) O(SO23-3-3.31)	3&5 3&5 3&5
1000	. 41	STEED	0 41 11-7.	. ME.	LIVIA		enerator E089	
- (Dwg	B B	20 20	B-4) Valve GA/EH GA/EH	0 0	BTC/CS PIT/RR	10	0(S023-3-3.31) 0(S023-3-3.31)	3&5 3&5
* 2HV	4052	, Feed		latio	n Valve	- Ste	am Generator E089	
2 2 2	8 8 8	20 20 20	GA/EH GA/EH GA/EH	0 0	BTC/CS FSTC/CS PIT/RR	10	0(S023-3-3.31) 0(S023-3-3.31) 0(S023-3-3.31)	3&5 3&5 3&5
* S21	305M	U036 (20-036-C-I	609),	Main Fe	ed Ch	eck at Steam Gener	ator E089
2 2	C	20 20	CK/SA CK/SA	0	CVTC/RR CVTO/CS	or/ua	M(S023-I-6.160) O(Later)	1&18 VRR-20 1&18 VRR-20
* S21	305M	U124 (6-124-C-5	99),	AFW Chec	k Val	ve at Steam Genera	tor E089
2	Ċ	6	CK/SA	C	CVTO/CS	or/Da	rling O(S^23-3-3.31.2)	5
* S21	305M	U129 (20-129-C- F-7) Valve	609), e Mfo	Main Fe	ed Ch	eck at Steam Gener	ator E088
2 2	C	20	CK/SA	0	CVTC/RR		M(S023-I-6.160) O(Later)	1&18 VRR-20 1&18 VRR-20
* S21	305M	U448 (6-448-C-5 F-7) Valv	99),	AFW Chec	k Val	ve at Steam Genera	tor E088
2	C	6	CK/SA	C	CVTO/CS	U1/ U4	O(SO23-3-3.31.2)	5

Code	Sec XI s Cat	Size	Valve and Actuator Type	Norm	Type	Str.	Test Organization (Procedure)	Notes and Valve Relief Requests
** Sy	stem:	Conta	inment HV	AC (N	ormal)			
* 2H	W9821	, Cont	ainment I	solat	ion Valve	- M	iniburge Supply	
2 2 2 2 2	19.: 4 A A A	0171A/ 8 8 8 8	C-6) Valve BTF/AO BTF/AO BTF/AO BTF/AO	0 0 0 0	AT/OP BTC/OP FSTC/OP PIT/RR	5	T(\$023-V-3.13) 0(\$023-3-3.30) 0(\$023-3-3.30) 0(\$023-3-3.30)	3&10 3&10 3&10 3&10
* 21	W9823	, Cont	ainment I	solat	ion Valve	- M	inipurge Supply	
2 2 2 2	A	8	B-4) Valve BTF/AO BTF/AO BTF/AO BTF/AO	0	AT/OP BTC/OP	5	T(S023-V-3.13) 0(S023-3-3.30) 0(S023-3-3.30) 0(S023-3-3.30)	3&10 3&10 3&10 3&10
							inipurge Exhaust	
2 2 2 2	/g.: 4 A A A	8 8 8 8	BTF/AO BTF/AO BTF/AO BTF/AO BTF/AO	0 0 0 0	AT/OP BTC/OP FSTC/OP PIT/RR	5	T(S023-V-3.13) 0(S023-3-3.30) 0(S023-3-3.30) 0(S023-3-3.30)	3&10 3&10 3&10 3&10
							inipurge Exhaust	
2 2 2 2	rg.: 4 A A A	0171A/ 8 8 8 8	BTF/AO BTF/AO BTF/AO BTF/AO BTF/AO	0 0 0 0	AT/OP BTC/OP FSTC/OP PIT/RR	5	T(S023-V-3.13) 0(S023-3-3.30) 0(S023-3-3.30) 0(S023-3-3.30)	3&10 3&10 3&10 3&10
* 2H	V9948	. Cont	ainment P	urge :	Supply			
2 2 2	A A	42	B-6) Valve BTF/AO BTF/AO BTF/AO	C	AT/OP BTC/CS FSTC/CS	12	T(S023-V-3.13) 0(S023-3-3.31) 0(S023-3-3.31)	3&10 3&10 3&10
			ainment P					
2 2	A A	42		C	AT/OP BTC/CS		T(S023-V-3.13) O(S023-3-3.31)	3,6&10 3,6&10

ENGINEERING PROCEDURE S023-V-3.5
REVISION 7 PAGE 45 OF 208
ATTACHMENT 2
TCN 7-16

UNIT 2 10/16/11

Code	Sec XI Cat	Size (in.)	Valve and Actuator Type	Norm Pos.	Test Type and Mode	Str. Time	Test Organizatio (Procedure)	n	Notes and Valve Relief Requests
* 2HV	/9950	Cont	ainment P	urge	Exhaust				
2	A	42	C-3) Valve BTF/MO BTF/MO	C	AT/OP		T(S023-V-3. O(S023-3-3.	13) 31)	3,6&10 3,6&10
* 2HV	9951	Cont	ainment Pr	urge	Exhaust				
2 2 2 2	A A A	42 42 42	E-6) Valve BTF/AO BTF/AO BTF/AO	C C C	AT/OP BTC/CS FSTC/CS	12	T(S023-V-3. 0(S023-3-3. 0(S023-3-3.	13) 31) 31)	3&10 3&10 3&10
			inment Sp						
* 2HV	/8150	, Isol	ation Val-	ve -	SDCS HX	E004	to LPSI Head	er	
2 (Dwg	B 4	0114B/	D-5) Valve	e Mfg	BTC/CS	orth 90	0(5023-3-3.	31)	.6
2	B	12	GL/MO GL/MO	C	BTO/CS PIT/RR	90	O(SO23-3-3. O(SO23-3-3. O(SO23-3-3.	31) 31)	6
* 2H	V8151	, Isol	ation Val	ve -	SDCS HX	E003	to LPSI Head	er	
2 (Dwg	B 8	12	F-5) Valve GL/MO	e Mrg	BTC/CS	90	0(5023-3-3.	31)	6
2	8	12	GL/MO GL/MO	C	BTO/CS PIT/RR	90	0(S023-3-3. 0(S023-3-3. 0(S023-3-3.	31)	6
							pray Header	#1	
2 (Dwg	9.: 4	01148/	C-4) Valv	e Mfg	.: Targ	et Ro	CK T(S023-V-3.	13)	3.6&10
2	A	8	GA/MO	C	BTO/OP	12	0(S023-3-3. 0(S023-3-3.	30)	3,6&10
2	A	8	GA/MU	C	PII/RK		0(5023-3-3.	30)	3,6&10
* 2H	V9368	, Cont	ainment I	solat	ion Valv	e - S	pray Header	#2	
2	A	3	G-4) Valv GA/MO	C	AT/RR		T(S023-V-3.	13)	3,6&10
2	A	8	GA/MO	C	BTO/OP	12	0(S023-3-3. 0(S023-3-3.	30)	3,6&10
	-	0	any mo		LA CANA		0 (3023 - 3 - 3 .	001	0,0010

ENGINEERING PROCEDURE S023-V-3.5
REVISION 7 PAGE 45 OF 208
ATTACHMENT 2
TCN 2-16

UNIT 2 10/15/91

Code Class	YT	Size (in.)	Valve and Actuator Type	Norm	Type	Str.	Test Organization (Procedure)	Notes and Valve Relief Requests
* 521			Spray	Heade	r #1		nt Isolation Scop	Check Valve -
(Dwg	AC	3 1148/1	SLX/SA	e Mfg C	AT/RP	or/Da	T(S023-V-3.13)	1,5,8,10&18 VRR-13
2	AC	8	SCK/SA	C	CVPO/RR		T(M.C.)	1,5,8,10&18 VRR-13
2	AC	8	SCK/SA	С	CVTO/RR		M(RMO)	1,5,8,10&18 VRR-13
* S21			Spray	Heade	r #2		nt Isolation Stop	Check Valve -
2 (Dwg	AL AL	01148/	G-3) Valv SCK/SA	e Mfg C	AT/RR	or/Ua	T(S023-V-3.13)	1,5,8,10&18 VRR-13
2	AC	8	SCK/SA	C	CVPO/RR		T(M.O.)	1,5,8,10&18 VRR-13
2	AC	8	SCK/SA	C	CVTO/RR		M(RMO)	1,5,8,10&18 VRR-13
(Dwg)	.: 4	01144/	0-3) Valv	e Mfa	.: Rock	well	niflow Stop Check Edwards T(SO23-V-3.5.4)	Valve
* S21 (Dwg 2	206M .: 4 C	U011 (0114A/ 2	2-011-C-3 H-3) Valv SCK/SA	29), e Mfg C	Pump 2PO .: Rock CVTO/OP	13 Mi well	niflow Stop Check Edwards 7(SO23-V-3.5.4)	Valve
* \$21 (Dwo	206M	U012 (8-012-C-4 C-3) Valv	05), e Mfa	Spray Pu	ap 2P	012 Discharge Sto	p Check Valve
2 2	C	8	SCK/SA SCK/SA	C	CVTC/CS		O(SO23-3-3.31.2) O(SO23-3-3.31.2)	5 5
(Dwg	.: 4	0114A/	G-3) Valv	e Mfa	.: Anch	or/Da	013 Discharge Sto rling 0(S023-3-3.31.2) 0(S023-3-3.31.2)	
2	C	Ď.	SCK/SA	(CA13/C2		0(5023-3-3,31.2)	5

ENGINEERING PROCEDURE SO.3-V-3.5
REVISION 7 PAGE 47 OF 208
ATTACHMENT 2
TCN 7-16

UNIT 2 10/16/91

Inservice Testing Program for Valves
San Onofra Nuclear Generating Station
(Test Org's: M=Maintenance, O = Operations, T = Technical)
Discussion of Cold Shutdown Intervals, See Next Att.

Notes and Valve Test Sec and Type Test
Code XI Size Actuator Norm at Str. Organization
Class Cat (in.) Type Pos. Mode Time (Procedure) Valve Relief Requests (8-029-C-645), Spray Pump 2P012 Discharge Check Valve to * S21206MU029 SDCS HX E004 (Dwg.: 40114A/C-3) Valve Mfg.: Anchor/Darling 2 C 8 CK/SA C CVTC/CS O(SO23-3-3.31.2) 5 2 C 8 CK/SA C CVTO/CS O(SO23-3-3.31.2) 5 * \$21206MU030 (8-030-C-645), Spray Pump 2P013 Discharge Check Valve to SDCS HX E003 ** System: Diesel Fuel Oil (2-039-D-627), Diesel Fuel Oil Transfer Pump 2P096 * S22421MU039 Discharge Check Valve (Cwg.: 40116A/C-6) Valve Mfg.: Kerotast 3 C 2 CK/SA C CVTO/OP T(SO23-V-3.5.4) (2-048-D-627), Diesel Fuel Oil Transfer Pump 2P093

* S2242 (2-048-D-627), Diesel Fuel Oil Transfer Pump 2P093
Discharge Check Valve
(Dwg.: J/D-7) Valve Mfg.; Kerotest

3 C Z CK/SA C CVTO/OP T(S023-V-3.5.4)

* S22421 9 354 (2-054-D-627), Diesel Fuel Oil Transfer Pump 2F095

Discharge Check Valve
(Dwg.: 40116A/C-3) Valve Mfg.: Kerotest
C CK/SA C CVTO/GP T(5023-V-3.5.4)

* S2242IMU063 (2-063-D-627), Diesel Fuel Oil Transfer Pump 2P094 Discharge Check Valve (Dwg.: 40116A/D-4) Valve Mfg.: Kerotest 3 C 2 CK/SA C CVTO/OP T(S023-V-3.5.4)

** System: Diesel Generator Air Start

* 2HV5931A, Diesel Generator 2G002, 20 Cyl., Air Start Relay Valve (Dwg.: 40110A/E-1) Valve Mfg.: Later 3 B GL/AO C BTO/OP 10 O(S023-3-3.23) 17

ENGINEERING PROCEDURE SO23-V-3.5
REVISION 7 PAGE 48 OF 208
ATTACHMENT 2
TCN 2-16

UNIT 2

Cude Class	Sec XI Size Cat (in.	Yalve and Actuator Norm) Type Pos.	Test Type and Str. Mode Time	Test Organization (Procedure)	Notes and Valve Relief Requests
* 2HV	5931B, Di	esel Generator	2G002, 16 Cyl	Air Start Relay	Valve
3 (Dwg	B 407108	GL/AO C	BTO/OP 10	0(5023-3-3.23)	17
* 2HV	5931C, Di	esel Generator	2G002, 20 Cy1	., Air Start Relay	Valve
3 (Dwg	B 40110A	(E-2) Valve Mfg GL/AD C	BTO/OP 10	0(5023-3-3.23)	17
				, Atr Start Relay	Valve
3	8	GL/AU C	BTO/OP 10	6(5023-3-3.23)	17
				., Air Start Relay	Valve
3 CDWG	B #01100	(E-1) Valve Mfg GL/AO C	BTO/OP 10	0(5023-3-3.23)	17
				., Air Start Relay	Valve
3 (rwg	B 401100	GL/AO C	BTO/OP 10	0(\$023-3-3.23)	17
* 546	5931G. Di	esel Generator	2G003, 20 Cy1	., Air Start Relay	Valve
3	B	(E-2) Valve Mfg GL/AO C	BTO/OP 10	0(5023-3-3.23)	17
* 2HV	5931H. D1	esel Generator	2G003, 16 Cyl	., Air Start Relay	Valve
3 (Dwg	B 801100	GL/AO C		0(5023-3-3.23)	17
* 2HY	5955A1, A	ir Start Sol.	Diesel Gener	ator 26002, 20 Cyl	., Right Bank
NA	В	3-Way/SO C	BTO/OP 10	0(5023-3-3.23)	17
* SHY	5955B1, A	ir Start Sol.	Diesel Gener	ator 2G002, 16 Cyl	., Left Bank
NA NA		3-Way/SO C	BTO/OP 10	0(5023-3-3.23)	17
* 2HY	5955C1, A	ir Start Sol.	Diesel Sener	ator 2G002, 20 Cyl	., Left Bank
NA	8	3-Way/SO C	BTO/OP 10	0(5023-3-3.23)	17

inservice Testing Program for Valves San Onofre Nuclear Generating Station (Test Org's: MaMaintenance, O = Operations, T = Technical) Discussion of Cold Shutdown Intervals, See Next Att.

Notes and Test Valve Valve Type Test and Code XI Size Actuator Norm and Str. Organization Class Cat (in.) Type Pos. Mode Time (Procedure) Relief Requests

* 2HY5955D1, Air Start Sol. - Diesel Generator 2G002, 16 Cyl., Right Bank (Dwg.: 401106/E-1) Valve Mfg.: MKW 3-Way/SO C BTO/OP 10 O(SG23-3-3.23) 17

* 2HY5955E2, Air Start Sol. - Diesel Generator 2G003, 20 Cyl., Right Bank (Dwg.: 40110C/E-1) Valve Mfg.: MKW NA B 3-Way/SO C BTC/OP 10 O(SO23-3-3.23) 17

* 2HY5955F2, Air Start Sol. - Diesel Generator 2G003, 16 Cyl., Left Bank (Dwg.: 40110D/E-2) Valve Mfg.: MKW 3-Way/SO C BTO/OP 10 O(SO23-3-3.23) 17

* 2HY5955G2, Air Start Sol. - Diesel Generator 2G003, 20 Cyl., Left Bank (Dwg.: 40110C/E-2) Valve Mfg.: MKW 3-Way/SO C BTO/OP 10 O(SO23-3-3.23) 17

* 2HY5955H2, Air Start Sol. - Diesel Generator 2G003, 16 Cyl., Right Bank (Dwg.: 40110D/E-1) Valve Mfg.: MKW 3-Way/SO C BTO/OP 10 O(SO23-3-3.23) 17

** System: Diesel Generator System

* \$22420MU135 (1-1/2-135-2-*). Diesel Air Receiver T-338 Air Inlet Check Valve (Dwg.: 401102/G-3) Valve Mfg.: Later C 1 1/2 CK/SA C CVTC/OP 0(\$023-3-3.30)

* S22420MU146 (1 1/2-146-Z-*), Diesel Air Réceiver T-335 Air Inlet Check Valve (Dwg.: 40110E/H-1) Valve Mfg.: Later C 1 1/2 CK/SA C CVTC/OP O(SO23-3-3.30)

(1 1/2-160-Z-*), Diesel Air Receiver T-336 A:: illet S22420MU160 Check Value (Dwg.: 40110E/G-3) Valve Mfg.: Later C 1 1/2 CK/SA C CVTC/OP 0(5023-3-3.30)

* S22420MU168 (1 1/2-168-Z-*), Diesel Air Receiver T-337 Air Inlet Check Valve (Dwg.: 40110C/H-1) Valve Mfg.: Later C 1 1/2 CK/SA C CVTC/OP 0(\$023-3-3.30)

PAGE 50 OF 208

UNIT 2 10/16/91

Lode Class	Sec X! Cat	Size (in.)	Valve and Actuator Type	Norm Pos.	Test Type and Mode	Str. Time	Test Organization (Procedure)	Notes and Valve Relief Requests
** Sys	tem:	Fire !	Protection					
* 2HV	5686	Conti	nt Isolat	on V	lve, Out	tside	- Fire Prot. Syste	em Water
2 2 2 2	AAAA	4 4 4	O-3) Valve GA/MO GA/MO GA/MO	C C C	AT/RR BTC/CS PIT/RR	33	T(S023-V-3.13) O(S023-3-3.31) O(S023-3-3.31)	3&10 3&10 3&10
* SA2	301MI						nt Isolation Valve	- Fire
2 (Dwg	.: 40 AC	01848/	Protect D-4) Valve CK/SA	Mfg	Anche	or/Da	rling T(S023-V-3.13)	10
** Sys	tem:	Fuel :	Stor. Pool	a R	efueling			
* ZLV	02270	C. RWS	To Charg	ging I	Pump Suc	tion	e k	
2 2	B	4	GA/MO GA/MO	C	BTO/CS PIT/RR	11	0(\$223-3-3.31) 0(\$023-3-3.31)	5&6 5&6
* \$21	219MI	J052 (4	5-052-C-61	75), 1	RWFT TOO	6 to	Charging Pump Suct	ion Header
2 (Dwg	C 40	6	B-7) Valve CK/SA	C	CVTO/CS	co/wa	0(\$023-3-3.31.2)	5
							ol Outlet Inside C	ontainment
5 (Dwd	A .	10	GA/M	C	AT/RR	orth	T(S023-V-3.13)	10
* S21	219MI	J101	(10-10)	- C - 2	12), Ref	uelin	g Pool Outlet Outs	ide
(Dwg	.: 40	0122A/	G-4) Valve	e Mfg	to Pump	orth		10
					AI/KK		T(S022-V-3.13)	10
			adwaste					
(Dwg		0131A/I	F-3) Valve			ste G	as to Surge Tank	
2 2 2	A	3	GA/MO GA/MO	0	AT/RR BTC/OP	31	T(S023-V-3.13) O(S023-3-3.30)	3,6810
2	Α	3	GA/MO		PIT/RR		0(\$023-3-3.30)	3,6810

Code Class	Sec XI Cat	Size (in.)	Valve and Actuator Type	Norm Pos.	Test Type and Mode	Str. Time	Test Organization (Procedure)	Notes and Valve Relief Requests	
/ Trues	+ A1	11216/	-21 Valve	MFC.	: Fish	D-101	T(S023-V-3.13) 0(S023-3-3.30) 0(S023-3-3.30) 0(S023-3-3.30) 0(S023-3-3.30)		
** Sys	tem:	Liquid	d Radwaste	9					
* 2HV (Dwg 2 2	. 41	0131A/	8-31 Valve	Mfa	: WKM		T(S023-V-3.13) O(S023-3-3.30) O(S023-3-3.30)	3,6&10 3,6&10 3,6&10	TOM
	. 41	01216/	2-21 Valve	o Mfa	· Field	0.4"	T(\$023-V-3.13) O(\$023-3-3.30) O(\$023-3-3.30) O(\$023-3-3.30)	3&10 3&10 3&10 3&10	
(Dwg	.: 41	01110/	(2-321 to Quer G-6) Valve GL/M	nch Ti e Mfg	ank .: Kero	test	Valve - Coolant P		
(Dwg	.: 4	01110/	Quench G-5) Valv	Tank e Mfg	.: Kero	test	ve - Coolant Polis		
** Sys	tem:	Nitro	gen Gas						
	5434	, Nitr	ogen to S D-6) Valve GL/AO GL/AO GL/AO GL/AO	afety e Mfg C C	Injecti : Fish AT/RR BTC/OP FSTC/OP PIT/RR	on Ta er 4	T(S023-V-3.13) O(S023-3-3.30) O(S023-3-3.30) O(S023-3-3.30)	3&10 3&10 3&10 3&10	

Sec Code XI Size Class Cat (in.)	Valve and Actuator Norm Type Fos.	Test. Type and Str. Mode Time	Test Organization (Procedure)	Notes and Valve Relief Requests
* 2HV5437, Nitr (Dwg.: 40192C/ 2 A 3/4 2 A 3/4 2 A 3/4 2 A 3/4			T(S023-V-3.13) 0(S023-3-3.30) 0(S023-3-3.30) 0(S023-3-3.30)	3&10 3&10 3&10 3&10
* 522418MUNG2 (3/4-002-C-611)	, Nitrogen Su · Kerotest	pply to Containmen	nt
* \$22418MU108 ((Dwg.: 40192C/ 2 AC 2	2-108-C-627), 'C-6) Valve Mfg CK/SA C	Nitrogen Supp .: Kerotest AT/RR	T(SO23-V-3.13)	ction Tanks
** System: Nucle	ear Sampling			
* 2HV0500, Post (Dwg.: 40172A) 2 A 1	(C-3) Valve Mfc	.: Target Ro	T(S023-V-3.13)	10
* 2HV0501, Post (Dwg.: 40172A) 2 A 1	(D-2) Valve Mfc	: Target Ro	T(S023-V-3.13)	10
* 2HV0502, Post (Dwg.: 40172A) 2 A 1	(B-3) Valve Mfc	: Target Ro	Ck T(S023-V-3.13)	10
* 2HV0503, Post (Dwg.: 40172A) 2 A 1	/R-21 Valve Mfc	g.: Target Ro	ock T(S023-V-3.13)	10
* 2HV0508, Con	tainment Isola /G-7) Valve Mf GL/MO C GL/MO C GL/MO C	tion - RCS Hot		3,6&10 3,6&10 3,6&10

Sec Code XI Size Class Cat (in.	Valve and Actuator Norm) Type Pos.	Test Type n and Str. Mode Time	Test Organization (Procedure)	Notes and Valve Relief Requests
* 2HV0509, Cor	tainment Isolat	ion - RCS Hot	Leg	
2 0 3/4	G1 /AO C	AT/RR	T(S023-V-3.13) 0(S023-3-3.30) 0(S023-3-3.30) 0(S023-3-3.30)	3&10 3&10 3&10 3&10
* 2HV0510, Cor	tain ent Isolat	ion - Pressur	izer Vapor Sample	Line
2 A 3/4 2 A 3/4 2 A 3/4	GL/10 C GL/MO C GL/MO C	AT/RR BTC/OP 24 PIT/RR	T(S023-V-3.13) 0(S023-3-3.30) 0(S023-3-3.30)	3,6&10 3,6&10 3,6&10
* 2HV0511, Cor	tainment Isolat	ion - Pressur	izer Vapor Sample	Line
2 A 3/4 2 A 3/4 2 A 3/4 2 A 3/4	(/E-5) Valve Mfg GL/AO C GL/AO C GL/AO C GL/AO C	AT/RR BTC/OP 5 FSTC/OP PIT/RR	T(S023-V-3.13) 0(S023-3-3.30) 0(S023-3-3.30) 0(S023-3-3.30)	3&10 3&10 3&10 3&10
* 2HV0512, Cor	tainment Isolat	ion - Pressur	izer Surge Line S	ample
2 A 3/4 2 A 3/4 2 A 3/4	GL/MO C GL/MO C GL/MO C	AT/RR BTC/OP 31 PIT/RR	T(\$023-V-3.13) 0(\$023-3-3.30) 0(\$023-3-3.30)	3,6&10 3,6&10 3,6&10
* 2HV0513, Cor	tainment Isolat	ion - Pressur	izer Surge Line S	ample
2 A 3/4	GL/AO C	AT/RR	T(\$023-V-3.13) 0(\$023-3-3.30) 0(\$023-3-3.30) 0(\$023-3-3.30)	3&10 3&10 3&10 3&10
* 2HV0514, Iso	lation Valve -	Quench Tank t	o Waste Gas Syste	m
2 A 3/4	GL/MO O GL/MO O GL/MO O GL/MO O	AT/RR	T(S023-V-3.13) O(S023-3-3.30) O(S023-3-3.30)	3,6&10 3,6&10 3,6&10

ENGINEERING PROCEDURE \$023-V-3.5 REVISION 7 ATTACHMENT 2 TCN 7-16

PAGE 54 OF 208

UNIT 2 10/16/91

Sec Code XI Size Class Cat (in.)	Valve and Actuator Norm Type Pos.	Type and Str.	Test Organization (Procedure)	Notes and Valve Relief Requests	
(Dwo : 401116/	C-21 Value Mfm	Fisher	T(S023-V-3.13) O(S023-3-3.30) O(S023-3-3.30) O(S023-3-3.30)		ITEM
(Dwg.: 40111C/	G-3) Valve Mfo	.: WKM	Gas Sampling Sys T(SO23-V-3.13) O(SO23-3-3.30) O(SO23-3-3.30)		
* 2HV0517, RCS (Dwg.: 40134A/ 2 A 3/4 2 A 3/4 2 A 3/4	Hot Leg #2 Sam G-7) Valve Mfg GL/MO C GL/MO C GL/MO C	ple Isolation .: WKM AT/RR BTC/OP 29 PIT/RR	Valve T(S023-V-3.13) O(S023-3-3.30) O(S023-3-3.30)	3,6&10 3,6&10 3,6&10	
1 Ph. m . ART TRA /	F 53 M-3 MF-	Transact Dr	r Train "A" Isol ck T(S023-V-3.13) O(S023-3-3.30) O(S023-3-3.30) O(S023-3-3.30)	Account to the second s	
* 2HV7801, Cont (Dwg.: 40170A/	ainment Airbor	ne Rad Monito	r Train "A" Isol	(Pen 30B)	
* 2HV7802, Cont		ne Rad Monito	r Train "A" Isol		

Code Class	XI Size	Actuator	Norm	Type	Str.	Test Organization (Procedure)	Notes and Valve Relief Requests
1 Dwg	· 401704	10.21 Valu	B MER	Taro	et Ros	r Train "B" Isol ck T(S023-V-3.13) O(S023-3-3.30) O(S023-3-3.30) O(S023-3-3.30)	
/ Disans	· 401704	11-41 Valu	a MFa	Tana	et Ro	e Rad Monitor Tra ck T(S023-V-3.13) O(S023-3-3.30) O(S023-3-3.30) O(S023-3-3.30)	
/ Dwg	· 401704	IF-AT VATU	o Mea	+ Tayo	ot Da	e Rad Monitor Tra ck T(S023-V-3.13) O(S023-3-3.30) O(S023-3-3.30) O(S023-3-3.30)	
* 2HV	7810, Con	tainment A	irbor	ne Rad M	onito	r Train "B" Isol	(Pen 16C)
* 2HV (Dwg	7811. Con	tainment A	irbor	ne Rad M	onito et Ro	r Train "B" Isol ck T(\$023-V-3.13) O(\$023-3-3.30) O(\$023-3-3.30) O(\$023-3-3.30)	(Pen 270)
		tmt Isolat /F-3) Valv GA/SO GA/SO GA/SO GA/SO		.: Targ	et Ro	Monitor Emergenc ck T(S023-V-3.13) O(S023-3-3.30) O(S023-3-3.30) O(S023-3-3.30)	y Sample 3&10 3&10 3&10 3&10

ENGINEERING PROCEDURE \$023- -3.5 REVISION 7 ATTACHMENT 2 TCN 7-16

PAGE 36 OF 208

10/16/91

Inservice Testing Program for Valves
San Onofre Nuclear Generating Station
(Test Org's: M=Maintenance, O = Operations, T = Technical)
Discussion of Cold Shutdown Intervals, See Next Att.

	,)1scus:	sion of C	010 51	nutdown I	nter	vals, See Next Att	
Code Class	Sec X1 Cat	Size (in.)	Valve and Actuator Type	Norm Pos.	Test Type and Mode	Str. Time	Test Organization (Procedure)	Notes and Valve Relief Requests
** Sys	tem:	Nucle	ar Servic	e Wat	er			
7.40		and the second of the second	A A		All the section is	2.169	Service Water	
2 2 2 2 2	.: 40 A A A	3 3 3 3 3	F-5) Valv GA/AO GA/AO GA/AO GA/AO	e Mrg 0 0 0	AT/RR BTC/OP FSTC/OP PIT/RR	7	T(S023-V-3.13) 0(S023-3-3.30) 0(S023-3-3.30) 0(S023-3-3.30)	3&10 3&10 3&10 3&10
			(3-236	-C-67	5), Conta	inme	nt Isolation Check	
2 (Dwg	.: 41 AC	01408/	Nuclea G-5) Valv CK/SA	e Mfa	.: Aloyo	o/Wa	T(S023-V-3.13)	10
** Sys	tem:	React	or Coolan	t				
(Dwo	. 4	01110/	ctor Head F-6) Valv GL/SO GL/SO GL/SO GL/SO	e Mfa	Targe	et Ro	0(\$023-3-3.48) 0(\$023-3-3.48) 0(\$023-3-3.48) 0(\$023-3-3.48)	
* 2HV	0296	B, Rea	ctor Head	Vent				
2 2 2 2 2	B B B B	1 1 1 1 1	F-6) Valv GL/SO GL/SO GL/SO GL/SO	C C C	BTC/CS BTO/CS FSTC/CS PIT/RR	5 5	O(SO23-3-3.48) O(SO23-3-3.48) O(SO23-3-3.48) O(SO23-3-3.48)	
* 2HV	0297	A, Pre	ssurizer E-6; Valv	Vent	Valve			

GL/SO BTC/CS 5 0(\$023-3-3.48) BTO/CS 5 0(5023-3-3.48) B GL/SO C B GL/SO C FSTC/CS 0(5023-3-3.48) GL/SO C PIT/RR 0(\$023-3-3.48)

Code Class	Sec XI Size Cat (in.)	Valve and Actuator No Type Po	Test Type rm and s. Mode	Str. Time	Test Organization (Frocedure)	Notes and Valve Relief Requests
(Dwg 2 2	0297B, Pre .: 40111C/ B 1 B 1	GL/SO C	fg.: Targ BTC/CS BTO/CS	5	0(\$023-3-3.48)	
2 2	8 1 B 1	GL/SO C	PIT/RR		0(5023-3-3.48)	
* 2HV (Dwg 2 2 2 2	0298. Vent :: 40111C/ B 1 B 1 B 1 B 1	: 31 Valve M	BTC/CS BTO/CS	et Ro	d/Pressurizer ck 0(\$023-3-3.48) 0(\$023-3-3.48) 0(\$023-3-3.48) 0(\$023-3-3.48)	
* 2HV (Dwg 2 2 2 2 2	0299, Quen .: 40111C/ B 1 B 1 B 1 B 1	(E-4) Valve M GL/SO C	Ifg.: Targ BTC/CS	et Ro	Head/Pressurizer ck O(S023-3-3.48) O(S023-3-3.48) O(S023-3-3.48) O(S023-3-3.48)	Vent
* 2HV (Dwg	.: 40123A/	(C-6) Valve N	Ifg.: WKM		3 to Auxiliary Sp O(S023-3-3.31)	oray 5&6
1 1	B 2 B 2 B 2	GA/MO C GA/MO C	BTO/CS PIT/RR	17	0(S023-3-3.31) 0(S023-3-3.31)	5&6 5&6
* 2HV (Dwg	.: 40123A/	(E-6) Valve N	Ifg.: WKM		3 to RCS Loop 2A	
1 1 1	B 2 B 2 B 2	GA/MO O GA/MO O	BTO/CS	23	O(SO23-3-3.31) O(SO23-3-3.31) O(SO23-3-3.31)	6 6
	.: 40123A	(E-6) Valve F	Afa .: WKM		3 to RCS Loop 1A	
1 1 1	B 2 B 2 B 2	GA/MO 0 GA/MO 0 GA/MO 0	BTC/CS BTO/CS PIT/RR	20	O(SO23-3-3.31) O(SO23-3-3.31) O(SO23-3-3.31)	6

Sec Code XI Size Class Cat (in.)	Valve and Actuator Norm Type Pos.	Test Type and Str. Mode Time	Test Organization (Procedure)	Notes and Valve Relief Requests
(Dwg.: 40123A/	F-6) Valve Mtg	FISHER	O(SO23-3-3.31) O(SO23-3-3.31) O(SO23-3-3.31)	5 5 5
(Dwg.: 40124A)	G-3) Valve Mrs	AT/RR	f to Volume Contr T(SO23-V-3.13) O(SO23-3-3.31) O(SO23-3-3.31)	3,5,6&10 3,5,6&10 3,5,6&10
2 6 2/4	(F-3) Valve Mf	g.: Fisher	V-`-e Inside Cont T(SO23-V-3.13) O(SO23-3-3.31) O(SO23-3-3.31) O(SO23-3-3.31)	
* 2PSV0200, Pr (Dwg.: 40111B	essurizer Safe /G-7) Valve Mf SV/SA C	g.: Dresser	M(S023-I-2.1)	2
	essurizer Safe /G-5) Valve Mf SV/SA C	g.: Dresser	M(S023-I-2.1)	2
1 B 2 1 B 2	down Isolation (/F-6) Valve Mf GL/AO O GL/AO O GL/AO O	Fg.: ITT BTC/CS 4 FSTC/CS	O(SO23-3-3.31) O(SO23-3-3.31) O(SO23-3-3.31)	5 5 5
* S21201MU019 (Dwg.: 40123/	(2-019-A-554) A/C-7) Valve M CK/SA C	, Auxiliary Sp fg.: Kerotest CVTO/CS	oray Check Valve O(SO23-3-3.31.2) 5
(Dwg.: 40123)	(2-020-A-554) A/E-7) Valve M CK/SA C	fg.: Kerotest	ne Check Valve to t O(SO23-3-3.31.2	

ENGINEERING PROCEDURE S023-V-3.5
REVISION 7 PAGE 59 OF 208
ATTACHMENT 2
TCN 7-16

UNIT 2 10/16/91

Inservice Testing Program for Valves
San Onofre Nuclear Generating Station
(Test Org's: M-M: '-tenance, O = Operations, T = Technical)
Discussion o = d Shutdown Intervals, See Next Att.

Valve Test Notes and Valve Type and Test Code XI Size Actuator Norm and Str. Organization Class Cat (in.) Type Pos. Mode Time (Procedure) Relief Requests * S21201MU021 (2-021-A-554), Charging 'ine Check Valve to RCS Loop 1A (Dwg.: 40123A/E-7) Valve Mfg.: Kerotest C 2 CK/SA C CVTO/CS 0(\$023-3-3.31.2) * S21201MU129 (2-129-A-554), Auxiliary Spray to RCS from Charging Pumps (Dwg.: 40123A/B-3) Valve Mfg.: Kerotest AC 2 CK/SA C AT/RR
AC 2 CK/SA C CVTO/CS T(S023-V-3.13) 10 0(\$023-3-3.31.2) 10 \$21201MU200 (14-200-C-645), Pump 2P016 Suction Check Vaive (Dwg.: 40112B/F-6) Valve Mfg.: Anchor/Darling 2 C 14 CK/SA C CVTC/CS O(SO23-3-3.31.2) 2 C 14 CK/SA CVTO/CS C 0(\$023-3-3.31.2) * \$21201MU202 (14-202-C-645), Fump 2P015 Suction Check Valve (Dwg.: 40112B/G-5) Valve Mfg.: Anchor/Darling 2 C 14 CK/SA C CVTC/CS O(SO23-3-3.31.2) 2 C 14 CK/SA C CVTO/CS O(SO23-3-3.31.2) ** System: Resp. & Service Air System * 2HV5338, Containment Isolation Valve - Instrument Air (Dwg.: 40191G/G-6) Valve Mfg.: Fisher A 1-1/2 GL/AO O AT/RR
A 1-1/2 GL/AO O BTC/CS 2
A 1-1/2 GL/AO O FSTC/CS
A 1-1/2 GL/AO O PIT/RR 0(\$02. 1) 2 3810 2 0(\$023-3-3.31) 3&10 O(SO23-3-3.31) 3&10 * S22417MU016 (1-1/2-016-C-617), Instrument Air Contmt Isol Check -Inside Containment (Dwg.: 40191G/G-6) Valve Mfg.: Kerotest 2 AC 1-1/2 CK/SA C AT/RR T(S023-V-3.13) * S22423MU017 (2-017-C-627), Containment Isolation Valve - Service Air (Dwg.: 40191E/C-5) Valve Mfg.: Kerntest

* S22423MU055 (2-055-C-387), Containment Isolation Valve - Service Air

T(S023-V-3.13)

T(S023-V-3.13) 10

2 AC 2 CK/SA C AT/RR

(Dwg.: 4019 C-6) Valve Mfg.: Vogt 2 A 2 GL/M C AT/CR REVISION 7 PAGE 60 OF 208
ATTACHMENT 2
TCN 7-16

UNIT 2 10/16/91

Code Class	Sec XI Size Cat (in.	Actuator	Norm	Test Type and Mode	Str. Time	Test Organization (Procedure)	Notes and Valve Relief Requests
** Sys	tem: Safe	ty Injecti	on				
		w Control /C-2) Valv				to Shutdown Cooli	ng System
2 2	B 10 B 10	GL/MO GL/MO	C	BTO/CS PIT/RR	80	0(S023-3-3.31) 0(S023-3-3.31)	6
* 2HV	8152, Iso	lation Val	ve -	SDCS Hea	t Excl	hanger E004 Inlet	
2	B 12	GA/MO	C	BTC/CS	100	O(SO23-3-3.31) O(SO23-3-3.31) O(SO23-3-3.31)	6
2 2	B 12	GA/MO	C	BTO/CS	100	0(\$023-3-3.31)	6
2	B 12	GA/MO	C	PIT/RR		0(\$023-3-3.31)	6
(Dwg	8 12	(G-2) Valv	e Mfg	BTC/CS	orth 100	nanger E003 Inlet 0(S023-3-3.31)	6
2	B 12	GA/MO	C	BTO/CS	100	0(\$023-3-3.31) 0(\$023-3-3.31)	6
2	B 12	GA/MO	C	PIT/RR		0(\$023-3-3.31)	6
(Dwg	.: 40112B	/C-3) Valv	e Mfg	.: Fish	er	Exchanger Bypass	
2	B 10	GL/MO	0	BTC/CS	40	0(3023-3-3.31) 0(\$023-3-3.31)	6
2	B 10	GL/MO	0	PIT/RR		0(5023-3-3.31)	6
(Dwg	.: 401128	/C-3) Valv	e Mfg	.: Walw	orth	er Bypass to LPSI	
2	B 14	GA/MO	0	BTC/CS	105	O(SO23-3-3.31) O(SO23-3-3.31)	6
5	B 14	GA/MO	0	PIT/RR		0(\$023-3-3.31)	6
(Dwg)	.: 40112B	I Pump 2P0 /H-2) Valv	e Mfa	.: West	inghou	use. Inc	
2	B 2	GA/MO	0	BTC/CS	12	O(\$023-3-3.31) O(\$023-3-3.31)	6
6	0 2	GA/MO	0	PIT/RR		O(SO23 3-3.31)	6
(Dwg	.: 40112B	I Pump 2P0 /E-3) Valv	e Mfg	.: West	inghou	use, Inc.	
2	8 2	GA/MO	0	BTC/CS	12	0(\$023-3-3.31)	6
2	B 2	GA/MO	0	PIT/RR		0(5023-3-3.31)	6

ENGINEERING PROCEDURE S023-V-3.5
REVISION 7 PAGE 61 OF 208
ATTACHMENT 2
TCN 7-16

UNIT 2 10/16/91

Sec Code X1 Size Class Cat (in.)	Actuator Norm	Type and Str.	Test Organization (Procedure)	Notes and Valve Relief Requests
* 2HV9302, Cont (Dwg.: 40112A/	rol Valve - Co	ntmt Emergenc	y Sump to Spray P	ump 2P013
2 B 24	BTF/MO C	BTO/OP 39.5	0(\$023-3-3.30) 0(\$023-3-3.30)	3&6 3&6
* 2HV9303, Cont (Dwg.: 40112A/	rol Valve - Co	ntmt Emergenc	y Sump to Spray P	ump 2P012
2 B 24	BTF/MO C	BTO/OP 39.5	O(SO23-3-3.30) O(SO23-3-3.30)	3&6 3&6
* 2HV9304, Cont (Dwg.: 40112A/			rgency Sump Outle	t
2 B 24	BTF/MO O	BTO/OP 39.5	O(SO23-3-3.30) O(SO23-3-3.30)	6
* 2HV9305. Cont (Dwg.: 40112A/			rgency Sump Outle	t
2 B 24 2 B 24	BTF/MO O BTF/MO O	BTO/OP 39.5 PIT/RR	0(S023-3-3.30) 0(S023-3-3.30)	6
* 2HV9306, Isol (Dwg.: 40114D/			ion to RWST TOOS	
2 B 4 2 B 4	GA/MO D GA/MO O	BTC/OP 30 PIT/RR	O(SO23-3-3.30) O(SO23-3-3.30)	3&6 3&6
* 2HV9307, Iso1 (Dwg.: 40114D/			ion to RWST TOOS	
2 B 4 2 B 4	GA/MO O GA/MO O	BTC/OP 30 PIT/RR	O(SO23-3-3.30) O(SO23-3-3.30)	3&6 3&6
* 2HV9322, Cont (Dwg.: 40112D/				
2 8 8	GL/MO C	BTO/OF 16	O(SO23-3-3.30) O(SO23-3-3.30)	3&6 3&6
* 2HV9323, Cont (Dwg.: 40112C/			to RCS Loop 1A	
2 B 2	GL/MO C	BTO/OP 15	O(S023-3-3.30) O(S023-3-3.30)	3&6 3&6

ENGINEERING PROCEDURE \$023-V-3.5 REVISION 7 ATTACHMENT 2 TON 7-18

PAGE 62 UF 208

UNIT 7 10/16/91

Code XI Size	Valve and Actuator Norm Type Pos.	Type and Str	Test . Organization a (Procedure)	Notes and Valve Relief Requests
* 2HV9324, Cont (Dwg.: 40112C/ 2 8 2 2 8 2	D-5) Value Mfg	BYO/OP 15	to RCS Loop 1A ock O(\$0?3-3-3.30) O(\$023-3-3.30)	3&6 3&6
* 2HV9325, C¢nt (Dwg.: 40112D/ 2 B 8	rol Valve - LF F-4) Valve Mfg GL/M() C	SI Header to .: Target R BTD/OP 16	RCS 1.cop 1B	3&6 3&6
* 2HV9326, Cont (Dwg.: 40112C/	rol Valve - HP C-4) Valve Hfg	SI Meader #2	to RCS Lcop 18	3&0 3&6
* 24V932), /ant (Dwg.: 40712C/ 2 8 2	B-5) Valve Mfg	Target k		3&5 3&6
* 24V9328, Ccnt. (Dwg.: 40]12D/ 2 8 8 2 8 8	E-4) Valve Mfg	.: Target R		385 386
(Dwg.: 40112C/	B-4) Valvs Mfc	.: Target ?	to RCS Lnop 2A ock 0(\$023-7-3.30) 0(\$023-3-3.30)	3&6 3&6
* 2HV9320, Cont (Dwg.: 40112C/ 2 B 2 2 B 2	A-5) Valve Mfg	.: Target R		3&6 3&6
(Dwg.: 40112D/ 2 B 8	rol Valve - LP H-4) Valve Mfg GL/MO C GL/MO C	BTO/OP 16	RCS Loop 2B lock 0(S023-3-3.30) 0(S023-3-3.31)	3&6 3&6

ENGINEERING PROCEDURE S023-V-3.5
REVISION 7 PAGE 63 OF 208
ATTACHMENT 2
TCN 7-16

UNIT 2 10/16/91

Code	Sec XI Size Cat (in.)	Valve and Actuator Horn Type Pos.	Test Type and Str Mode Time	Test Organization (Procedure)	Notes and Valve Relief Requests
* 2117	9332, Cont	rol Valve - hf (F-4) Valve Mfg GL/MU C	SI Header #2	to RCS Loop 2B	
2 2	B 2 B 2	GL/MU C GL/MO C	BTO, OP 15 PIT/RR	O(SO23-3-3.30) O(SO23-3-3.30)	3&6 3&6
* 2HV	9333, Cont	rol Valve - Hi	SI Header #1	to RCS Loop 2B	
2 2	B 2 B 2	GL/MO C	BTO/CP 15 PIT/RR	0(S023-3-3.30) 0(S023-3-3.30)	3&6 3&6
2.84	401140	FF W S S S S S S S S S S S S S S S S S S	5.84/48	k Drain Header to I	
2 2 2	A 2 A 2 A 2	GL/MO C GL/MO C GL/MO C	AT/RR BTC/OP 13 PIT/RR	T(SO23-V-3.13) O(SO23-3-3.30) O(SO23-3-3.30)	3810 3810 3810
* 2HV	9336. Isol		SDCS LO LPST	Pump Suction	
2 2 2	B 16 B 16 B 16	GA/MO OC GA/MO OC GA/MO OC	BTC/OP 80 BTO/OP 80 PIT/RR	O(SO23-3-3.30) O(SO23-3-3.30) O(SO23-3-3.30)	6 6
* 2HV	9337, Isol	ation Valve -	SDCS to LPSI	Pump Suction	
1 1 1 1	A 16 A 16 A 16 A 16	'C-4) Valve Mfg GA/MO OC GA/MO OC GA/MO OC GA/MO OC GA/MO OC	AT/RR BTC/CS 103 BTO/CS 103 PIT/RR	O(SO23-3-3.31.1) O(SO23-3-3.31) O(SO23-3-3.31) O(SO23-3-3.31)	5&6 5&6 5&6 5&6
				S Loop 2	
1	A 16	C-2) Valve Mfg GA/MO OC GA/MO OC GA/MO OC GA/MO OC	AT/RR	O(SO23-3-3.31.1) O(SO23-3-3.31) O(SO23-2-3.31) O(SO23-3-3.31)	5&6 5&6 5&6 5&6
				let Valve to RCS L	oop 1#
1 1	B 12 B 12	(C-6) Valve Mfg GA/MO O GA/MO O	BTO/CS 35 PIT/RR	O(SO23-3-3.31) O(SO23-3-3.31)	5&6 5&6

Code Class	Sec XI Size Cat (in.)	Valve and Actuator Norm	Test Type n and Mode	Test Str. Organization Time (Procedure)	Notes and Valve Relief Requests
* 2HV (Dwg 2	9345, Safe .: 40113A/ B 1 B 1 B 1	Cy Injection (G-6) Valve Mfg GL/SO C GL/SO C	a: Targe	Vent Valve t Rock 2 O(SO23-3-3.31) .0(SO23-3-3.31) O(SO23-3-3.31)	5 5 5
* 2HV (Dwg 2 2	9347, Safe .: 40114D, B 4 B 4	GA/MO O	BTC/OP	32 O(SO23-3-3.30) O(SO23-3-3.30)	346
2 (Dwg	B 4	(D-4) Valve Mf	g.: WKM BTC/OP	urn to RWST T005 1solv 32 0(S023-3-3.30) 0(S023-3-3.30)	
* 2HV (Dwg	B 12	(D-2) Valve Mf	g.: WKM BTO/CS		5 j 586
	.: 40113A	ety Injection (G-2) Valve Mf GL/SO C GL/SO C GL/SO C	d.: Targe		5 5 5
	B 12	ety Injection /C-6) Valve Mf GA/MO O GA/MO O	g.: WKM BTO/CS	Outlet Valve to R:5 Lo 32 O(\$023-3-3-31) C(3023-3-3.31)	op 2A 5&6 5&6
* 2HV (Dwg 2 2	.: 40113B	aty Injection /G-6) Valve Mf GL/SO C GL/SO C GL/SO C	g.: Targe	Vent Valve t Rock 2 O(SO23-3-3.31) O(SO23-3-3.31) O(SO23-3-3.31)	5 5 5

ENGINEERING PROCEDURE S023-V-3.5 REVISION 7 PAGE 65 OF 208 ATTACHMENT 2 TCN 7-16

Code Class	Sec XI Cat	Size (in.)	Valve and Astuator Type	Norm Pos.	Test Type and Mode	Str. Time	Test Organization (Procedure)	Notes and Valve Relief Requests
* 2HV	9370	Safe	ty Inject	ion T	ank TO10	Outl	et Valve to RCS Lo	oop 2B
i i 1	B	12	D-2) Valve GA/MO GA/MO	0	BTO/CS	35	0(S023-3-3.31) 0(S023-3-3.31)	5&6 5&6
* 2HV	9375	, Safe	ty Inject	ion T	ank TOO9	Vent	Valve	
(Dwg	.: 4 B	1	G-2) Valv	e Mrg	BTO/CS	et Ko 2	0(5023-3-3.31)	5
3	8	1	CL/SO	Č	PIT/RR		O(S023-3-3.31) O(S023-3-3.31) O(S023-3-3.31)	5
* 2HV	9377	, SDCS	Bypass t	o LPS	I Suctio	n Iso	lation Valve	
(Dwg	.: 4	01120/	B-4) Valv GA/MO	e Mfg	AT/RR		0(\$023-3-3.31.1)	5&6
1	A	10	GA/MO	00	BTC/CS BTO/CS	240	O(\$023-3-3.31.1) O(\$023-3-3.31) O(\$023-3-3.31) O(\$023-3-3.31)	5&6 5&6
i	A	10	GA/MO	OC	PIT/RR		0(\$023-3-3.31)	586
							olation Valve	
1 (DAG	A	10	(B-3) Valv GA/MO	OC MIG	AT/RR		O(SO23-3-3.31.1) O(SO23-3-3.31) O(SO23-3-3.31) O(SO23-3-3.31)	5&6
1	A	10	GA/MO GA/MO	00	BTC/CS	240	0(5023-3-3.31)	5&6 5&6
i	A	10	GA/MO	oc	PIT/RR		0(5023-3-3.31)	586
							olation Valve - Se	eal
			(B-7) Valv				0(5023-3-3.30)	6
2	В	12	GA/MO	OC	BTO/OP	14	0(\$023-3-3.30)	6
							0(\$023-3-3.30)	
* 2H	V9420	0, Con:	trol Valvi (G-3) Val	e - H	PSI Head	er #1 aet R	to RCS Loop 2 Hot	t Leg
2	A	3	GL/MO	C	AT/RR		T(S023-V-3.13)	6&10
2 2	A	3	GL/MO	C	PIT/RR	11	T(S023-V-3.13) O(S023-3-3.31) O(S023-3-3.31)	6810

ENGINEERING PROCEDURE S023-V-3.5
REVISION 7 PAGE 66 OF 208
ATTACHHENT 2
TCN 7-16

UNIT 2 10/16/91

Code Class	Sec XI Size Cat (in.)	Valve and Actuator Norr Type Pos	Test Type n and Str. Mode Time	Test Organization (Procedure)	Notes and Valve Relief Requests
* 2HV	9434, Cont	rol Valve - HI	SI Header #2	to RCS Loop 1 Hot	Leg
(Dwg	.: 401120/	E-3) Valve Mfg).: Target Ro	T/S023-V-3 13)	6810
2	A 3	GL/MO C	BTO/CS 11	0(5023-3-3.31)	6810
2	A 3	GL/MO C	PIT/RR	T(S023-Y-3.13) O(S023-3-3.31) O(S023-3-3.31)	6&10
* 2PS	V9349. Shu	tdown Cooling	System Relief	Valve From RCS Lo	op No. 2
(Dwg	.: 401120/	(C-5) Valve Mf	: Crosby	M(SO23-1-2.34)	
2	C 8	RV/SA C	RVT/RR	M(SO23-1-2.34)	15
* 521	204MU001	(24-001-C-) Suction Hea	724). RW Tank	2T005 to Spray Pun	np 2P012
(Dwg	.: 40112A/	n. Ol Value Mfr	TDW/Mices	on	
2	C 24	SDCK/SA C	CYPO/OP	T(S023-V-3.5.4)	1&18 VRR-02
2	C 24	SDCK/SA C	CVTC/RR	T(S023-V-3.5.4) M(S023-I-6.20) M(S023-I-6.20)	1818 VKK-02
-	C 20	SUCK/SA C	CVID/KK	M(3023-1-0.20)	1010 AKK-05
		Suction Hea	der	2TOOE to Spray Pun	p 2P013
(Dwg	.: 40112A/	D-7) Valve Mf	.: TRW/Missi	on	
2	C 24	SDCK/SA C	CVPO/OP	T(S023-V-3.5.4)	1&18 VRR-02
2	C 24	SDCK/SA C	CVTC/RR	T(S023-V-3.5.4) M(S023-I-6.20) M(S023-I-6.20)	1&18 VRR-02
6	L 24	SUCK/SA C	CVIO/KK	M(3023-1-6.20)	1818 AKK-05
* 521	204MU003	(24-003-C-) Emergency 5	(24), Outlet C	heck Valve - Conta	inment
(Dwg	.: 40112A/	A-6) Valve Mfc	TRW/Missi	on	
2	C 24	SDCK/SA C	CVPO/RR	T(Later) M(S023-I-6.20)	1,5&18 VRR-03
2	C 24	SDCK/SA C	CVTO/RR	M(S023-1-6.20)	1,5&18 VRR-03
* \$21	204MU004	(24-004-C-) Emergency 5	(24), Outlet C	heck Valve - Conta	inment
(Dwg	.: 40112A/	B-6) Valve Mfc	: TRW/Missi	on	
2	C 24	SDCK/SA C	CVPO/RR	T(Later)	1,5&18 VRR-03
2	C 24	SDCK/SA C	CVTO/RR	T(Later) M(S023-I-6.20)	1,5&18 VRR-03

ENGINEERING PROCEDURE S023-V-3.5
REVISION 7 PAGE 67 OF 208
ATTACHMENT 2
TCN 7-16

Makes and

UNIT 2 10/16/91

Sec Code XI Size Class Cat (in.)	Valve and Actuator Norm Type Pos.	Test Type and Str. Mode Time	Test Organization (Procedure)	Notes and Valve Relief Requests
			os 2P017 and 2P018	
(Dwg.: 40112A/0 2 C 10 2 C 10	-71 Value Mfa	.: Aloyco CVPO/OP CVTO/RR	T(S023-V-3.5.4) O(S023-3-2.8)	VRR-08 VRR-08
* \$21204MU008	(10-008-C-6	75), HPSI Pump	os 2P018 and 2P019	Suction Check
(Dwg.: 40112A/C 2 C 10 2 C 10	-7) Valve Mfg	: Aloyco CVPO/OP CVTO/RR	T(S023-V-3.5.4) O(S023-3-2.8)	VRR-08 VRR-08
* S21204MU012 (4 (Dwg.: 40112A/0	-012-C-358),	HPSI Pump 2P0	17 Discharge Check	Valve
2 C 4	SCK/SA C	CVTO/CS	0(5023-3-3.21.2)	5
* S21204MU015 (4 (Dwg.: 40112A/0	-015-C-358),	HPSI Pump 2PO	19 Discharge Check	Valve
2 0 4	SCK/SA C	CVTO/CS	0(\$023-3-3.31.2)	5
* S21204MU016 (4 (Dwg.: 40112A/E	-016-C-358),	HPSI Pump 2PO	18 Discharge Check	Valve
2 C 4	SCK/SA C	CVTO/CS	O(S023-3-3.31.2)	5
* S21204MU017	(4-017-C-55 Pressure He		s 2P118 & 2P019 to	#2 High
(Dwg.: 40112A/C	(-2) Valve Mfg	.: Anchor/Da	rling 0(5023-3-3.31.2)	5
* S21204MU018	(3-018-A-55 Valve	1), HPSI Comb	ined Header to RCS	Loop 1A Check
(Dwg.: 40112C/C 1 AC 3 1 AC 3)-3) Valve Mfg	.: Anchor/Da AT/RR CVTO/CS	rling 0(S023-3-3.31.1) 0(S023-3-3.31.2)	5 5
* S21204MU019	(3-019-A-55 Valve	1), HPSI Comb	ined Header to KCS	Loop 1B Check
(Dwg.: 40112C/0 1 AC 3 1 AC 3		.: Anchor/Da AT/RR CVTO/CS	rling 0(S023-3-3.31.1) 0(S023-3-3.31.2)	5 5

UNIT 2

Inservice Testing Program for Valves
San Onofre Nuclear Generating Station
(Test Org's: M=Maintenance, O = Operations, T = Technical)
Discussion of Cold Shutdown Intervals, See Next Att.

Notes and Valve Test Valve Type Test and Code XI Size Actuator Norm and Str. Organization Clase Cat (in.) Type Pos. Mode Time (Procedure) Relief Requests (3-020-A-551), HPSI Combined Header to RCS Loop 2A Check * S21204MU020 Valve (Dwg.: 40112C/B-3) Valve Mfg.: Anchor/Darling CK/SA C AT/RR O(SO23-3-3.31.1) 5 CK/SA C CVTO/CS O(SO23-3-3.31.2) 5 0(\$023-3-3.31.2) 5 AC 3 (3-021-A-551), HPSI Combined Header to RCS Loop 2B Check * S21204MU021 Valve (Dwg.: 40112C/F-2) Valve Mfg.: Anchor/Darling AC 3 CK/SA C . AT/RR O(SO23-3-3.31.1) 5 AC 3 CK/SA C CVTO/CS 0(\$023-3-3.31.2) 5 * S21204MU024 (10-024-C-406), LPSI Pump 2P015 Discharge Stop Check Valve (Dwg.: 40112B/G-2) Valve Mfg.: Anchor/Darling C 10 SCK/SA C CVTO/CS O(SO23-3-3.31.2) 5 * S21204MU025 (10-025-C-406), LPSI Pump 2P016 Discharge Stop Check Valve (Dwg.: 40112B/G-3) Valve Mfg.: Anchor/Darling C 10 SCK/SA C CVTO/CS O(SO23-3-3.31.2) 5 * S21204MU027 (12-027-A-551), Safety Injection Headers to RCS Loop 1A (Dwg.: 40113A/C-5) Valve Mfg.: Anchor/Darling AC 12 CK/SA C AT/RR O(SO23-3-3.31.1) 5 AC 12 CK/SA C CVTO/CS O(SO23-3-3.31.2) 5 * S21204MU029 (12-029-A-551), Safety Injection Headers to RCS Loop 1B (Dwg.: 40113A/C-4) Valve Mfg.: Anchor/Darling AC 12 CK/SA C AT/RR O(SO23-3-3.31.1) 5 AC 12 CK/SA C CVTO/CS O(SO23-3-3.31.2) 5 0(\$023-3-3.31.2) 5 * S21204MU031 (12-031-A-551), Safety Injection Headers to RCS Loop 2A (Dwg.: 40113B/C-5) Valve Mfg.: Anchor/Darling AC 12 CK/SA C AT/RR O(SO23-3-3.31.1) 5 AC 12 CK/SA C CVTO/CS O(SO23-3-3.31.2) 5 * S21204MU033 (12-033-A-551), Safety Injection Headers to RCS Loop 2B (Dwg.: 40113B/C-3) Valve Mfg.: Anchor/Darling 1 AC 12 CK/SA C AT/RR O(S023-3-3.31.1) 5 1 AC 12 CK/SA C CVTO/CS O(S023-3-3.31.2) 5

ENGINEERING PROCEDURE S023-V-3.5
REVISION 7 PAGE 69 OF 208
ATTACHMENT 2
TCN 7-16

UNIT 2 10/16/91

Inservice Testing Program for Valves
San Onofre Nuclear Generating Station
(Test Org's: Madaintenance, O * Operations, T * Technical)
Discussion of Cold Shutdown Intervals, See Next Att.

Notes and Valve Test Valve Type Test and Sec Relief Code XI Size Actuator Norm and Str. Organization Class Cat (in.) Type Pos. Mode Time (Procedure) Requests * S21204MU034 (2-034-C-329), HPSI 2P017 Miniflow (Dwg.: 40112A/H-2) Valve Mfg.: Rockwell Edwards SCK/SA C CVTO/OP T(S023-V-3.5.4) C 2 * S21204MU035 (2-035-C-329), HPSI 2P019 Miniflow (Dwg.: 40112A/D-3) Valve Mfg.: Rockwell Edwards C 2 SCK/SA C CVTO/OP T(S023-V-3.5.4) \$21204" 34 (2-036-C-329), HPS1 2P018 Train "A" Miniflow N/F-3) Valve Mfg.: Rockwell Edwards

* S21204MU037 (2-037-C-329), LPSI Pump 2P015 Miniflow Stop Check Valve (Dwg.: 40112B/H-2) Valve Mfg.: Rockwell Edwards 2 C 2 SCK/SA C CVTO/OP T(S023-V-3.5.4)

SCK/SA C CVTO/OP T(S023-V-3.5.4)

* S21204MU040 (12-040-A-551), Safety Injection Tank T008 Outlet Check Valve (Dwg.: 40113A/D-6) Valve Mfg.: Anchor/Darling

1 AC 12 CK/SA C AT/RR O(SO23-3-3.31.1) 1,5&18 VRR-11
1 AC 12 CK/SA C CVPO/CS O(SO23-3-3.31.2) 1,5&18 VRR-11
1 AC 12 CK/SA C CVTO/RR M(SO23-1-6.160) 1,5&18 VRR-11

* S21204MU041 (12-041-A-551), Safety Injection Tank T007 Outlet Check Valve

(Dwg.: 40113A/D-2) Valve Mfg.: Anchor/Darling

1 AC 12 CK/SA C AT/RR O(SO23-3-3.31.1) 1,5&18 VRR-11
1 AC 12 CK/SA C CVPO/CS O(SO23-3-3.31.2) 1,5&18 VRR-11
1 AC 12 CK/SA C CVTO/RR M(SO23-1-6.160) 1,5&18 VRR-11

* S21204MU042 (12-042-A-551), Safety Injection Tank 7009 Outlet Check Valve

(Dwg.: 40113B/D-6) Valve Mfg.: Anchor/Darling

1 AC 12 CK/SA C AT/RR O(SO23-3-3.31.1) 1,5&18 VRR-11
1 AC 12 CK/SA C CVPO/CS O(SO23-3-3.31.2) 1,5&18 VRR-11
1 AC 12 CK/SA C CVTO/RR M(SO23-1-6.160) 1,5&18 VRR-11

ENGINEERING PROCEDURE S023-V-3.5
REVISION 7 PAGE 70 OF 208
ATTACHMENT 2
TCN 7-16

UNIT 2 10/16/91

Code Class	Sec XI Size Cat (in.)	Valve and Actuator Norm Type Pos.	Type and Str.	Test Organization (Procedure)	Notes and Valve Relief Requests
* S21	204MU043	(12-043-A-5	51), Safety I	njection Tank T010	Outlet Check
1 1 1	.: 40113B/ AC 12 AC 12 AC 12	Valve D-2) Valve Mfg CK/SA C CK/SA C CK/SA C	.: Anchor/Da AT/RR CVPO/CS CVTO/RR	rling 0(\$023-3-3.31.1) 0(\$023-3-3.31.2) M(\$023-I-6.160)	1,5&18 VRR-11 1,5&18 VRR-11 1,5&18 VRR-11
* S21	204MU063 (2-063-C-329), E-2) Valve Mfg	LPSI Pump 2P0 .: Rockwell	16 Miniflow Stop C	
* S2: (Dwg 1 1	.: 40112D/	G-2) Valve Mfg	.: Anchor/Da	lve to RCS Loop 1A rling O(SO23-3-3.31.1) O(SO23-3-3.31.2)	
(Dwg	.: 40112D/	F-2) Valve Mfg	.: Anchor/Da	lve to RCS Loop 1B rling O(SO23-3-3.31.1) O(SO23-3-3.31.2)	
	.: 40112D/	F-2) Valve Mfg	.: Anrhor/Da	lve to RCS Loop 2A rling O(SO23-3-3.31.1) O(SO23-3-3.31.2)	
(Dwg	.: 40112D/	H-2) Valve Mfg	.: Anchor/Da	lve to RCS Loop 2B rling O(SO23-3-3.31.1) O(SO23-3-3.31.2)	
		D-7) Valve Mfg	.: Anchor/Da	016 Suction Header rling T(S023-V-3.5.4) (S023-SPT-8)	Check Valve 1 VRR-12 1 VRR-12
* \$21 (Dwg 2 2	.: 40112A/	G-8) Valve Mfg	LPSI Pump _P :: Anchr /Da CVPO/O' CVTO/ A	O15 Suction Check rling T(SO23-V-3.5.4) T(SO23-SPT-8)	Valve 1 VRR-12 1 VRR-12

ENGINEERING PROCEDURE S023-V-3.5
REVISION 7 PAGE 71 OF 208
ATTACHMENT 2
TCN 7-16

UNIT 2 10/16/91

Inservice Testing Program for Valves
San Onofre Nuclear Generating Station
(Test Org's: M=Maintenance, O = Operations, T = Technical)
Discussion of Cold Shutdown Intervals, See Next Att.

Notes and Valve Test Valve Sec and Type Test
Code XI Size Actuator Norm and Str. Organization
Class Cat (in.) Type Pos. Mode Time (Procedure) Relief Requests * S21204MU087 (16-087-C-675), Spray Pump 2P013 Suction Check Valve (Dwg.: 40114A/G-6) Valve Mfg.: Anchor 'narling 2 C 16 CK/SA C CVTO/CS ?(SO23-3-3.31.2) 5 * S21204MU088 (16-088-C-675), Spray Pump 2P012 Suction Check Valve (Dwg.: 40114A/C-6) Valve Mfg.: Anchor/Darling 2 C 16 CK/SA C CVTO/CS O(5023-3-3.31.2) 5 (2-099-C-334), Containment Isolation, SI Tank to Drain * S21204MU099 Header to RFWT 2T005 (Dwg.: 40114D/F-6) Valve Mfg.: Kerotest 2 A 2 GL/M C AT/RR 10 T(S023-V-3.13) * S21204MU104 (2-104-C-329), HPSI 2P018 Train "B" Miniflow (Dwg.: 40112A/E-2) Valve Mfg.: Rockwell Edwards 2 C 2 SCK/SA C CVTO/OP T(SO23- 3.5.4) * S21204MU152 (3-152-A-551), To #2 HPSI Header (Dwg.: 40111A/F-5) Valve Mfg.: Anchor/Darling AC 3 CK/SA C AT/RR O(SO23-3-3.31.1) AC 3 CK/SA C CVTC/CS O(SO23-3-3.31.2) * \$21204MU.55 (3-155-C-551), HPSI Header #1 to RCS Loop 2 Hot Leg (Dwg.: 4'J112C/F-7) Valve Mfg.: Anchor/Darling C 3 CK/SA C CVTO/CS O(SO23-3-3.31.2) 5 (3-156-A-551), HPSI Header #1 to RCS Loop 2 Hot Leg S212)4MU156 Inlet Check Valve (Dwg.: 40112D/B-2) Valve Mfg.: Anchor/Darling AL 3 CK/SA C AT/RR O(SO23-3-3.31.1) 5 PC 3 CK/SA C CVTO/CS O(SO23-3-3.31.2) 5 * S21204MU157 (3-157-A-550), HPSI Header #2 to RCS Loop 1 Hot Leg (Dwg.: 40112C/E-2) Valve Mfg.: Anchor/Darling AC 3 CK/SA C AT/RR T(S023-V-3.13) 5&10 AC 3 CK/SA C CVTO/CS O(S023-3-3.31.2) 5&10 0(5023-3-3.31.2) 5&10 * S21204MU158 (3-158-A-550), HPSI Header #1 to RCS Loop 2 Hot Leg

T(S023-V-3.13)

0(\$023-3-3.31.2) 5&10

(Dwg.: 40112C/G-2) Valve Mfg.: Anchor/Darling AC 3 CK/SA C AT/RR T(SO: AC 3 CK/SA C CVTO/CS O(SO:

REVISION 7 PAGE 72 OF 208
ATTACHMENT 2
TCN 7-16

UNIT 2 10/16/91

Sec Code XI Size Class Cat (in.)	Valve and Actuator Norm Type Pos.	Type and Str.	Test Organization (Procedure)	Notes and Valve Relief Requests
/Dwg . 401124/	1-71 Valve Mfg	.: Anchor/Da	016 Suction Header rling T(S023-V-3.5.4) T(S023-SPT-8)	
(Dwg.: 40112A/0	G-8) Valve Mfg. CK/SA C	: Anchor/Da	015 Suction Header riing T(S023-V-3.5.4) T(S023-SPT-8)	1 VRR-12
** System: Salt N	Water Cooling			
/ Dun . 401264//	2.31 Value MEA	Ficher	O(SO23-3-3.30) O(SO23-3-3.30) O(SO23-3-3.30) O(SO23-3-3.30)	ve
* 2HV6201, Salt (Dwg.: 40126A/0 3 B 30 3 B 30 3 B 30	0-3) Valve Mfg.	: Fisher	O(SO23-3-3.30) O(SO23-3-3.30) O(SO23-3-3.30) O(SO23-3-3.30)	ve
(Dwg.: 40126B/0	G-3) Valve Mfg.	: Fisher	0(S023-3-3.30) 0(S023-3-3.30) 0(S023-3-3.30) 0(S023-3-3.30)	ve
* 2HV6203, Salt (Dwg.: 40126B/8 3 B 30 3 B 30 3 B 30	-3) Valve Mfg.	: Fisher	O(S023-3-3.30) O(S023-3-3.30) O(S023-3-3.30) O(S023-3-3.30)	ve
* 2HV6494, SWCS (Dwg.: 40127C/I 3 D 30 3 B 30	from CCW Heat 0-3) Valve Mfg. BTF/MO C BTF/MO C	Exchanger EOG : Fisher BTO/OP PIT/RR	02B to Overflow at 0(S023-3-3.30) 0(S023-3-3.30)	Seawall 6&7 6&7

UNIT 2 10/16/91

Code Class	Sec XI Cat	Size (in.)	Valve and Actuator Type	Norm	Type	Str. Time	Test Organization (Procedure)	Notes and Valve Relief Requests
* 2HV6	5495	Salt	Water fro	om CCI	Heat E	xchan	ger E002B	
3	B	30	BTF/MO BTF/MO	C	BTO/OP PIT/RR	75	O(\$023-3-3.30) O(\$023-3-3.30)	6
* 2HV6	5496	SWCS	from CCW	Heat	Exchange	er EO	01A to Overflow at	Seawall .
3 3	B	30	BTF/MO BTF/MO	C	BTO/OP PIT/RR		O(SO23-3-3.30) O(SO23-3-3.30)	6&7 6&7
/ Durin	. 41	01276 //	0.91 Value	MEA	. Fich	04	ger E001A	
3 3	B	30	BTF/MO BTF/MO	C	BTO/OP PIT/RR	75	0(S023-3-3.30) 0(S023-3-3.30)	6
			30-009-D-3 G-4) Valve				112 Discharge Chec	k Valve
3	C	30	SDCK/SA SDCK/SA	OC	CVTC/OP CVTO/OP		T(S023-V-3.5.4) T(S023-V-3.5.4)	
			30-010-D-1 0-4) Valve				113 Discharge Chec	k Valve
3	c	30 30	SDCK/SA SDCK/SA	00	CVTC/OP CVTO/OP		T(S023-V-3.5.4) T(S023-V-3.5.4)	
* S21	413MI	U011 (3	30-011-D-1 G-4) Valve	722), Mfg	SWCS Pur	mp 2P	307 Discharge Chec	ck Valve
3	C	30	SDCK/SA SDCK/SA	OC	CVTC/OP CVTO/OP		T(S023-V-3.5.4) T(S023-V-3.5.4)	
* S21	413MI	U012 (30-012-D-1 E-4) Valve	722).	SWCS Pu	mp 2P	114 Discharge Chec	k Valve
3	C	30	SDCK/SA SDCK/SA	OC OC	CVTC/OP CVTO/OP	ni sa i	T(S023-V-3.5.4) T(S023-V-3.5.4)	
* S21	413M	U013			i), SWCS	`'ump	2P112 Recirculat	ion to Cyclone
3 (Dwg	: 41 C	0126A/	Separa F-4) Valvi CK/SA	e Mfg			tics T(S023-V-3.5.4)	

ENGINEERING PROCEDURE S023-V-3.5 PAGE 74 OF 208 REVISION 7 ATTACHMENT TCN 7-16

UNIT 2 10/16/91

Inservice Testing Program for Valves San Onofre Nuclear Generating Station (Test Org's: M=Maintenance, O = Operations, T = Technical) Discussion of Cold Shutdown Intervals, See Next Att.

Notes and Valve Test Sec and Type Test
Code XI Size Actuator Norm and Str. Organization
Class Cat (in.) Type Pos. Mode Time (Procedure) Valve Relief Request.

(1-016-D-691), SWCS Pump 2P113 Recirculation to Cyclone * S21413MU016 Separator (Dwg.: 40126A/D-4) Valve Mfg.: Controlmatics

CK/SA C CVTO/OP T(S023-V-3.5.4)

(1-021-D-691), SWCS Pump 2P307 Reci culation to Cyclone * \$21413MU021 Separator (Dwg.: 40126B/F-4) Valve Mfg.: Controlmatics

3 C 1 CK/SA C CVTO/OP T(S023-V-3.5.4)

(1-024-D-691), SWCS Pump 2P114 Recirculation to Cyclone * S21413MU024 Separator (Dwg.: 40126B/D-4) Valve Mfg.: Controlmatics

CK/SA C CVTO/OP T(SO23-V-3.5.4) 3 C 1

(1-047-D-691), Check Valve Service Water Supply to Salt * S21413MU047 Water Pump 2P112 ... (Dwg.: 40126A/G-7) Valve Mfg.: CK/SA C CVTC/OP T(SO23-SPT-7) C 1

(1-048-D-691), Check Valve Service Water Supply to Salt * S21413MU048 Water Pump 2P113 (Dwg.: 40126A/D-7) Valve Mfg.: 3 C 1 CK/SA C CVTC/OP T(SO23-SPT-7)

* S21413MU049 (1-049-D-691), Check Valve Service Water Supply to Salt Water Pump 2P307 (Dwg.: 40126B/G-7) Valve Mfg.:

CK/SA C CVTC/OP T(SO23-SPT-7) C 1

* \$21413MU050 (1-049-D-691), Check Valve Service Water Supply to Salt Water Pump 2P114 (Dwg.: 40126B/D-7) Valve Mfg.: 3 at 1 CK/SA C CVTC/OP T(SO23-SPT-7)

ENGINEERING PROCEDURE S023-V-3.5 REVISION 7 PAGE 75 OF 208 ATTACHMENT 2

TCN 7-16

Code Class	Sec XI Cat	Size (in.)	Valve and Actuator Type	Norm Pes.	Test Type and Mode	Str. Time	Test Organization (Procedure)	Notes and Valve Relief Requests
** Sys	tem:	Steam						
* 2HV	4053	Blowe	down Isola (-2) Valve	tion	Valve -	Steam	n Generator E089	
2 2 2	8	6	GL/AO GL/AO GL/AO	0	BTC/OP	9	0(\$023-3-3.30) 0(\$023-3-3.30) 0(\$023-3-3.30)	3 3 3
* 2HV	4054	Blowe	down Isola	ation	Valve -	Steam	n Generator E080	
2 2 2	B	6	GL/AO GL/AO GL/AO	0	BTC/OP FSTC/OP	9	O(S023-3-3.30) O(S023-3-3.30) O(S023-3-3.30)	3 3 3
							Generator E089	
2 2 2 2 2	B	3/4	GL/AD GL/AD GL/AD	0	BTC/OP FSTC/OP	5	0(S023-3-3.30) 0(S023-3-3.30) 0(S023-3-3.30)	3 3 3
							Generator E088	
2 2 2 2	B	3/4	F-2) Valve GL/AO GL/AO GL/AO	0	BTC/OP FSTC/OP	5	0(S023-3-3.30) 0(S023-3-3.30) 0(S023-3-3.30)	3 3 3
							to AFW Pump 2P140	
2	B B B	4	GL/AO GL/AO GL/AO	OC	BTO/OP	4	0(\$023-3-3.30) 0(\$023-3-3.30) 0(\$023-3-3.30)	
* 2HV	8201	Steam	m from Sto	eam G	enerator	E088	to AFW Pump 2P140	
2 2 2 2	8	4	E-3) Valve GL/AO GL/AO GL/AO	30	BTO/OP FSTO/OP	4	O(SO23-3-3.30) O(SO23-3-3.30) O(SO23-3-3.30)	

Code Class	XI	Size (in.)	Actuator	Norm	Type	Str.	Test Organization (Procedure)	Notes and Valve Relief Requests
* 2HV	8204	. Steam	m Cenerati	or EO	B9 Main !	Steam	Isolation Valve	
2	P	An	B-2) Valve GA/HY GA/HY GA/HY GA/HY	0	BTC/CS	8	0(S02-3-3.17) 0(S02-3-3.17) 0(S02-3-3.17) 0(S02-3-3.17)	3&9 3&9 3&2 3&9
* 2HV	8205	, Stea	m Generat	or EO	88 Main	Steam	Isolatiur Valve	
2 2 2 2	BBBB	40 40 40 40	B-3) Valv GA/HY GA/HY GA/HY GA/HY	0 0 0	BTC/CS BTPC/OP FSTC/CS PIT/RR	8	O(SO2-3-3.17) O(SO2-3-3.17) O(SO2-3-3.17) O(SO2-3-3.17)	3&9 3&9 3&9 3&9
* 2HV	8419	, Main	Steam Du	mp to	Atmosph	ere	0.1	
2 2 2 2 2 2		8 8 8 8	AV/A0 AV/A0 AV/AC AV/A0 AV/A0	00000	BTC/CS BTO/CS BTPC/UP FST/CS PIT/AL	15 60	0(S023-3-3.31) 0(S023-3-3.31) 0(S023-3-2.18.1) 0(S023-3-3.31) 0(S023-3-3.31)	3&11 VRR-25 3&11 VRR-25 3&11 VRR-25 3&11 VRR-25 3&11 VRR-25
* 2HV	8421	, Main	Steam Du	mp to	Atmosph	ere		
2 2 2 2 2 2		8 8 8 8	F-6) Valv AV/AO AV/AO AV/AO AV/AO	C C C C	BTC/CS BTO/CS BTPO/OP FSTC/CS PIT/RR	15 60	0(S023-3-3.31) 0(3023-3-3.31) 0(S023-3-2.18.1) 0(S023-3-3.31) 0(S023-3-3.31)	3&17 VRR-25 3&11 VRR-25 3&11 VRR-25 3&11 VRR-25 3&11 VRR-25
* 2PS (Dwg	V840	1, Mai 0141D/	n Steam R G-7) Valv SV/SA	elief e Mfg	Valve .: Cros	by	M(S023-I-2.5)	
(Dwg	.: 4	01410/	n Steam R G-6) Valv SV/SA	e Mfg	.: Cros	by	M(S023-I-2.5)	2
(Dwg	1.: 4	01410/	n Steam R G-6) Valv SV/SA	e Mfg	.: Cros	by	M(S023-1-2.5)	2
					ATTACHME	NT 2		PAGE 49 OF 52

ENGINEERING PROCEDURE SC23-V-3.5
REVISION 7 PAGE 77 OF 208
ATTACHMENT 2
TCN 7-16

UNIT 2 10/16/91

Sec Code XI Size Class Cat (in.)	Valve and Actuator Norm Type Pos.	Type and Str.	Test Organization (Proce 'me)	Notes and Valve Relief Requests
* 2FSV8404, Mair (Dwg.: 40141D/ 2 C 6	a-5) Valve Mfg	.: 4.05	M(S023-I-2.5)	2
* 2PSV8405, Mai: (Dwg.: 40141D/6 2 C 6		.: Crosby	M(S023-1-2.5)	2
* 2PSV8406, Main (Dwg.: 401417/ 2 C 6		.: Crosby	M(S023-I-2.5)	2
* 2PSV8407, Main (Dwg.: 40141D/ 2 C 6		.: Crosby	M(S023-1-2.5)	2
* 2PSV8408, Mai: (Dwg.: 40141D/ 2 C 6	F-5). Valve Mfg	.: Crosby	M(S023-I-2.5)	2
* 2PSV8409, Mai (Dwg.: 40141D/ 2 C 6	G-3) Valve Mfg	.: Crosby	M(S023-I-2.5)	2
* 2PSV8410, Mai (Dwg.: 40141C/ 2 C 6	G-7) Valve Mfg	.: Crosby	M(S023-I-2.5)	2
* 2PSV8411, Mai (Dwg.: 40141C/ 2 C 6	G-6) Valve Mfg	.: Crosby	M(S023-I-2.5)	2
* 2PSV8412, Mai (Dwg.: 40141C/ 2 C 6	n Steam Relief G-6) Valve Mfg SV/SA C	Valve .: Crusby RVT/RR	M(S023-I-2.5)	2
* 2PSV8413, Mai (Dwg.: 40141C/ 2 C 6		.: Crosby	M(S023-I-2.5)	2

ENGINEERING PROCEDURE S023-V-3.5
REVISION 7 PAGE 78 OF 208
ATTACHMENT 2
TCN 7-16

UNIT 2 10/16/91

* 2PSV8414, Main Steam Relief Valve (Dwg.: 40141C/G-5) Valve Mfg.: Crosby 2 C 6 SV/SA C RVT/RR M(S023-1-2.5) 2	
* 2PSV8415, Main Steam Relief Valve (Dwg.: 40141C/G-4) Valve Mfg.: Crosby 2 C 6 SV/SA C RVT/RR M(S023-I-2.5) 2	
* 2PSV8416, Main Steam Relief Valve (Dwg.: 40141C/G-4) Valve Mfg.: Crosby 2 C 6 SV/SA C RVT/RR M(S023-I-2.5) 2	
* 2PSV8417, Main Steam Relief Valve (Dwg.: 40141C/G-3) Valve Mfg.: Crosby 2 C 6 SV/SA C RVT/RR M(S023-I-2.5) 2	
* 2PSV8418, Main Steam Relief Valve (Dwg.: 40141C/G-3) Valve Mfg.: Crosby 2 C 6 SV/SA C RVT/RR M(SO23-I-2.5) 2	
* \$21301MU003 (4-003-D-620), Steam Supply - S/G E088 to AFP Turbin K007 Check Valve	e
(Dwg.: 40141C/F-1) Valve Mfg.: Anchor/Darling 3	18 18 18
* S21301MU005 (4-005-D-620), Steam Supply - S/G E089 to AFP Turbin K007 Check Valve	e
(Dwg.: 40141C/E-2) Valve Mfg.: Anchor/Darling 3	18 18 18
* S21301MU027 (3/4-027-P-635), Instrument Air Supply Check Valve f 2HV8419	
(Dwg.: 40141D/D-6) Valve Mfg.: Anchor/Darling	
2 AC 3/4 CK/SA C AT/RR O(SO23-3-2.18.1) 12 2 AC 3/4 CK/SA C CVTC/OP O(SO23-3-3.30) 12	

2 2 ENGINEERING PROCEDURE S023-V-3.5 PAGE 79 OF 208 REVISION 7 ATTACHMENT 2 TCN 7-16

UNIT 2 10/16/91

Inservice Testing Program for Valves San Onofre Nuclear Generating Station (Test Org's: M=Maintenance, O = Operations, T = Technical) Discussion of Cold Shutdown Intervals, See Next Att.

Notes and Valve Test Sec and Type Test
Code XI Size Actuator Norm and Str. Organization
Class Cat (in.) Type Pos. Mode Time (Procedure) Valve Relief Requests (3/4-034-P-636), Instrument Air Supply Check 'live for * S21301MU034 2HV8421 (Dwg.: 40141C/E-5) Valve Mfg.: Anchor/Darling 2 AC 3/4 CK/SA C AT/RR O(SO23-3-2.18.1) 12 2 AC 3/4 CK/SA C CYTC/OP O(SO23-3-3.30) 12 ** System: Sumps and Drains * 2HV303, Containment Sump to Radwaste Sump (Dwg.: 40117A/E-2) Valve Mfg.: WKM GA/MO O AT/FR T(S023-V-3.13) 3,5,6&10 GA/MO O BTC/OP 40 O(S023-3-3.30) 3,5,6&10 GA/MO O PIT/RR O(S023-3-3.30) 3,5,6&10 A 3 TON A 3 2 2 A 3 * 2HV58C4, Containment Symp to Radwaste Sump Isolation Valve (Dwg.: 40117A/E-2) Valve Mfg.: Fisher A 3 GA/AO O AT/RR T(SO23-V-3.13) A 3 GA/AO O BTC/OP 5 O(SO23-3-3.30) A 3 GA/AO O FSTC/OP O(SO23-3-3.30) 3.5&10 3,5&10 2

A 3 GA/AO O PIT/RR C(SO23-3-3.30) 3,5&10

ENGINEERING PROCEDURE S023-V-3.5
REVISION 7 PAGE 80 OF 208
ATTACHMENT 3
TCN 7-16

UNIT 2

JUSTIFICATION FOR VALVES NOT TESTED QUARTERLY

- ** System: Auxiliary Feedwater
- * S21305MU121 (6-121-D-598), AFW Pump 2P140 Supply to Steam Generator E089

Exercising this valve while the plant is at power would result in placing unnecessary thermal stresses on the feedwater piping, which could result in premature failure of this piping.

- * S21305MU126 (6-126-D-598), AFW Pump 2P141 Discharge Check Valve Same as S21305MU121.
- * S21305MU532 (6-532-D-598), AFW Pump 2P504 Discharge Check Valve Same as S21305MU121.
- * S21305MU547 (6-547-D-598), AFW Pump 2P140 Discharge Check Valve Same as S21305MU121.
- ** System: Boric Acid Makeup
- * 2HV9235, BAMU Tank T072 to Gravity Feed to Charging Pump Suction Opening this valve would result in injecting highly concentrated boric acid into the reactor coolant system, causing plant shutdown.
- * 2HV9240, BAMU Tank T071 to Charging Pump Suction Header Control Valve Same as HV-9235.
- * 2HV9247, BARL Pump to Charging Pump Suction Control Valve Same as HV-9235.
- * S21218MU033 (3-033-D-675), BAMU Pump 2P175 Discharge Check Valve Full stroke exercising of this valve during plant power operation would result in over-boration of the reactor coolant system and plant shutdown.
- * S21218MU035 (3-035-D-676), BAMU Pump 2P174 Discharge Check Valve Same as S21218MU033.
- ** System: Chemical and Volume Control
- * 2HV9200, Charging Pumps to Regenerative Heat Exchanger E063 Exercising while the plant is at power would isolate normal charging to the RCS. This would result in a non-compliance with Technical Specification 3.1.2.4, which requires two flow paths for boration during power operation.
- * 2HV9205, Regenerative Heat Exchanger to Letdown Heat Exchanger Exercising this valve during power operation would result in unnecessary thermal stress transients on the regenerative heat exchanger and reactor coolant system charging nozzles.

UNIT 2

- * 2LV0227B, VCT Outlet Valve Closing this valve requires shifting charging pump suction and injecting highly concentrated bor; acid into the RCS, causing plant shutdown.
- * 2.79267, Letdown Containment Isolation Valve Same as HV-9205.
- * S21208MU015 (4-015-C-675), VCT to Charging Pump Suction Check Valve Same as LV-02278.
- * S21208MU082 (3-082-C-675), Gravity Feed BAMU Tanks to Charging Pump 2P190 Suction Same as HV9235.
- * S21208MU083 (3-083-C-675), BAMU Pumps to Charging Pumps Suction Header Same as HV9235.
- * S21208MU130 (2-130-C-334), Contmt Isol Chg Pump Disch to Aux Spray Regen HX Bypass Exercising this valve would result in unnecessary thermal transients and stress on the pressurizer spray nozzle.
- ** System: Component Cooling Water
- * 2HV6211, Containment Isolation Valve CCW Non-Critical Loop Exercising this valve during operation would secure or direct cooling water flow from RCP seals, which could result in seal damage and plant shutdown.
- * 2HV6212, CCW from Heat Exchanger E001A to Non-Critical Loop Same as HV-6211.
- * 2HV6213, Component Cooling Discharge to Non-Critical Loop Same as HV-6211.
- * 2HV6216, Containment Isolation CCW Non-Critical Loop Return Same as HV-6211.
- * 2HV6218, Component Cooling Water Pump Suction From Non-Critical Loop Same as HV-6211.
- * 2HV6219, Component Cooling Water Pump Suction From Non-Critical Loop Same as HV-6211.
- * 2HV6223, Containment Isolation CCW Non-Critical Loop Supply Same as HV-6211.

ENGINEERING PROCEDURE S023-V-3.5
REVISION 7 PAGE 82 OF 208
ATTACHMENT 3
TCN 7-16

UNIT 2

- * 2HV6236, Containment Isolation CCW Non-Critical Loop Return Same as HV-6211.
- * 2HV6500, Component Cooling Water from SDCS Heat Exchanger E003 Same as HV-6211.
- * 2HV6501, Component Cooling Water from SDCS Heat Exchanger E004 Same as HV-6211.
- * S21203MU101 (28-101-D-725), CCW Pump 2P024 Discharge Check Valve Full stroke exercising of this valve during power operation would require diverting CCW from the RCP seals, which could result in seal damage and plant shutdown.
- * S21203MU102 (28-102-D-725), CCW Pump 2P026 Discharge Check Valve Same as S21203MU101.
- * S21203MU103 (28-103-D-725), CCW Pump 2P025 Discharge Check Valve Same as S21203MU101.
- * S21203MU264 (1-264-D-627), Nitrogen Supply to Component Cooling Water Surge Tank T003A
 Stroke Test requires placing the affected CCW loop out of service.
- * S21203MU265 (1=265-D-627), Nitrogen Supply to Component Cooling Water Surge Tank T003A Same as S21203MU264.
- * S21203MU266 (1-266-D-627), Nitrogen Supply to Component Cooling Water Surge Tank T004B Same as S21203MU264.
- * \$21203MU267 (1-267-D-627), Nitrogen Supply to Component Cooling Water Surge Tank T004B Same as \$21203MU264.
- * S21203MU268 (1-268-D-627), Nuclear Plant Service Water Supply to CCW Loop A Same as S21203MU264.
- * S21203MU269 (1-269-D-627), Nuclear Plant Service Water Supply to CCW Loop B Same as S21203MU264.

ENGINEERING PROCEDURE S023-V-3.5
REVISION 7 PAGE 83 OF 208
ATTACHMENT 3
TCN 7-16

UNIT 2

- ** System: Condensate and Feedwater
- * 2HV1105, Feedwater Bypass Valve for Steam Generator E023
 This valve cannot be full stroke exercised during power operation as this would disturb steam generator level control, which could result in plant shutdown.
- * 2HV1106, Feedwater Bypass Valve for Steam Generator E088 Same as HV-1105.
- * 2HV4047, Feedwater Block Valve Steam Generator E088
 Full stroke exercising this valve during power operation would result in loss of feedwater flow to the steam generator, which could result in a plant shutdown.
- * 2HV4048, Feedwater Isolation Valve Steam Generator E088 Same as HV-4047.
- * 2HV4051, Feedwater Block Valve Steam Generator E089 Same as HV-4047.
- * 2HV4052, Feedwater Isolation Valve Steam Generator E089 Same as HV-4047.
- * S21305MU036 (20-036-C-609), Main Feed Check at Steam Generator E089 This valve cannot be stroked during any mode in which main feed must remain uninterrupted. It therefore can only be stroked open when main feed is initiated following a plant shutdown.
- * S21305MU124 (6-124-C-599), AFW Check Valve at Steam Generator E089 Exercising this valve while the plant is at power would result in placing unnecessary thermal stresses on the feedwater piping, which could result in premature failure of this piping.
- * S21305MU129 (20-129-C-609), Main Feed Check at Sleam Generator E088 This valve cannot be stroked during any mode in which main feed must remain uninterrupted. It therefore can only be stroked open when main feed is initiated following a plant shutdown.
- * S21305MU448 (6-448-C-599), AFW Check Valve at Steam Generator E088 Same as S21305MU124.
- ** System: Containment HVAC (Normal)
- * 2HV9948, Containment Purge Supply
 See Valve Relief Request No. 19. This valve is passive except in
 Modes 5 and 6, at which time it is tested. In addition, exercising
 this valve during plant power operation would result in non-compliance
 with the Technical Specifications.

UNIT 2

- * 2HV9949, Containment Purge Supply Same as HV-9948.
- * 2HV9950, Containment Purge Exhaust Same as HV-9948.
- * 2HV9951, Containment Purge Exhaust Same as HV-9948.
- ** System: Containment Spray
- * 2HV8150, Isolation Valve SDCS HX E004 to LPSI Header Applying power or opening this valve while the plant is at power would result in non-compliance with the Technical Specifications. Opening this valve could defeat both trains of LPSI.
- * 2HV8151, Isolatica Valve SDCS HX E003 to LPSI Header Same 25 HV-8150.
- (8-004-C-406), Containment Isolation Stop Check Valve -* S21206MU004 Spray Header #1 Exercising this valve with flow during operation or cold shutdown would result in a spraydown of the containment building.
- * S21206MU006 (8-006-C-406), Containment Isolation Stop Check Valve -Spray Header #2 Same as S21206MU004.
- * 521206MU012 (8-012-C-406), Spray Pump 2P012 Discharge Stop Check Valve Full stroke exercising of this check valve while the plant is at power would require disabling both trains of LPSI.
- * S21206MU014 (8-014-C-406), Spray Pump 2P013 Discharge Stop Check Valve Same as 521206MU012.
- * S21206MU029 (9-029-C-645), Spray Pump 2P012 Discharge Check Valve to SUCS HX E004 Same as S21206MU012.
- * S21236MU030 (8-030-C-645), Spray Pump 2P013 Discharge Check Valve to SDCS HX E003 Same as S21206MU012.
- ** System: Fire Protection
- * 2HV5686, Contmt Isolation Valve, Outside Fire Prot. System Water Exercising this valve during plant power operation will activate the Fire Protection System in the Unit 2 Containment building.

REVISION 7 PAGE 85 OF 208
ATTACHMENT 3
TCN 7-16

UNIT 2

- ** System: Fuel Stor. Pool & Refueling
- * 2LV0227C, RWST To Charging Pump Suction Opening this valve would result in injecting highly concentrated boric acid into the reactor coolant system, causing plant shutdown.
- * S21219MU052 (6-052-C-675), RWFT T006 to Charging Pump Suction Header Same as LV-0227C.
- ** System: Reactor Coolant
- * 2HV0296A, Reactor Head Vent
 This valve is part of the Reactor Coolant System Boundary Isolation.
 Opening this valve while the Reactor Coolant System is pressurized would release Reactor Coolant to the vent system. Further, power is normally removed from the solenoid.
- * 2HV0296B, Reactor Head Vent
 This valve is part of the Reactor Coolant system Boundary isolation.
 Opening this valve while the Reactor Coolant System is pressurized would release Reactor Coolant to the vent system. Further, power is normally removed from the solenoid.
- * 2HV0297A, Pressurizer Vent Valve
 This valve is part of the Reactor Coolant system Boundary isolation.
 Opening this valve while the Reactor Coolant System is pressurized would release Reactor Coolant to the vent system. Further, power is normally removed from the solenoid.
- * 2HVO297B, Pressurizer Vent Valve
 This valve is part of the Reactor Coolant system Boundary isolation.
 Opening this valve while the Reactor Coolant System is pressurized would release Reactor Coolant to the vent system. Further, power is normally removed from the solenoid.
- * 2HV0298, Vent to Contmt from Reactor Head/Pressurizer
 This valve is not considered accessible during power operation.
 Further, power is normally removed from the solenoid.
- * 2HV0299, Quench Tank Inlet from Reactor Head/Pressurizer Vent
 This valve is normally inaccessible during power operation. Further,
 power is normally removed from the solenoid.
- * 2HV9201, Regenerative Heat Exchanger E063 to Auxiliary Spray Exercising would result in unnecessary thermal transients and stress on the pressurizer spray nozzle.

ENGINEERING PROCEDURE S023-V-3.5
REVISION 7 PAGE 86 OF 208
ATTACHMENT 3
TCN 2-16

UNIT 2

- * 2HV9202, Regenerative Heat Exchanger £063 to RCS Loop 2A

 This valve must remain open during power operation in order to ensure consistency with assumptions made regarding system flow to the RCS cold legs in the accident analysis and to comply with the intent of LCO 3.5.2.
- * 2HV9203, Regenerative Heat Exchanger E063 to RCS Loop 1A Same as HV-9202.
- * 2HV9204, RCS Loop 2B Letdown to Regenerative Heat Exchanger Exercising this valve during power operation would result in unnecessary thermal stress transients on the regenerative heat exchanger and reactor coolant system charging nazzles.
- * 2HV9217, Reactor Coolant System Bleed Off to Volume Control Tank Exercising this valve could result in Reactor Coolant Pump seal failure and subsequent reactor shutdown.
- * 2HV9218, RCS Bleed Off to VCT Isolation Valve Inside Containment Same as HV-9217.
- * 2TV0221, Letdown Isolation Valve Same as HV-9204.
- * S21201MU019 (2-019-A-554), Auxiliary Spray Check Valve Same as HV-9201.
- * S21201MU020 (2-020-A-554), Charging Line Check Valve to RCS Loop 2A This valve cannot be tested without closing HV-9203 (discussed elsewhere in this table).
- * S2J201MU021 (2-021-A-554), Charging Line Check Valve to RCS Loop 1A This valve cannot be tested without closing HV-9202 (discussed elsewhere in this table).
- * S21201MU129 (2-129-A-554), Auxiliary Spray to RCS from Charging Pumps Same as HV-9201.
- * S21201MU200 (14-200-C-645), Pump 2P016 Suction Check Valve
 This valve can only be exercised when plant is on shutdown cooling.
- * S21201MU202 (14-202-C-645), Pump 2P015 Suction Check Valve Same as S21204MU200.
- ** System: Resp. & Service Air System
- * 2HV5388, Containment Isolation Valve Instrument Air Exercising this valve during plant power operation isolates instrument air to the Containment and could result in a plant shutdown.

UNIT 2

- ** System: Safety Injection
- * 2HV0396, Flow Control Valve LPSI Pumps to Shutdown Cooling System Full stroke testing of this valve during power operation would result in non-compliance with Technical Specification 3/4.5.2, which requires this valve to be closed with power to the valve operator removed.
- * 2HV8152, Isolation Valve SDCS Heat Exchanger E004 Inlet Same as HV-0396.
- * 2HV8153, Isolation Valve SDCS Heat Exchanger E003 Inlet Same as HV-0396.
- * 2HV8160, Flow Control Valve SDCS Heat Exchanger Bypass Full stroke exercising of this valve during power operation would result in non-compliance with Technical Specification 3/4.5.2, which requires this valve to be open with power removed.
- * 2HV8161, Block Valve SDCS Heat Exchanger Bypass to LPS1 Same as HV-8160.
- * 2HV8162, LPSI Pump 2P015 Miniflow Block Valve Same as HV-8160.
- * 2HV8163, LPSI Pump 2P016 Miniflow Block Valve Same as HV-8160.
- * 2HV9337, Isolation Valve SDCS to LPSI Pump Suction This valve is required by Technical Specification 3/4.5.2 to be interlocked to prevent opening whenever reactor coolant system pressure exceeds 376 PSIA.
- * 2HV9339, Isolation Valve SDCS from RCS Loop 2 Same as HV-9337.
- * 2HV9340, Safety Injection Tank TOO8 Outlet Valve to RCS Loop 1A Restoring power to this valve or opening this valve while the plant is at power would result in non-compliance with the Technical Specifications.
- * 2HV9345, Safety Injection Tank T008 Vent Valve

 Ouring power operation, Technical Specifications require power to be locked out for this valve. This prevents inadvertent pressurization of the SIT.
- * 2HV9350, Safety Injection Tank T009 Outlet Valve to RCS Loop 1B Same as HV-9347.

UNIT 2

- * 2HV9355, Safety Injection Tank T007 Vent Valve Same as HV-9345.
- * 2HV9360, Safety Injection Tank T009 Outlet Valve to RCS Loop 2A Same as HV-9340.
- * 2HV9365, Safety Injection Tank T009 Vent Valve Same as HV-9345.
- * 2HV9370, Safety Injection Tank T010 Outlet Valve to RCS Loop 2B Same as HV-9340.
- * 2HV9375, Safety Injection Tank T009 Vent Valve Same as HV-9345.
- * 2HV9377, SDCS Bypass to LPSI Suction Isolation Valve
 This valve is required by Technical Specification 3/4.5.2 to be
 interlocked to prevent opening whenever reactor coolant system
 pressure exceeds 376 psia.
- * 2HV9378, SDCS Bypass to LPSI Suction Isolation Valve Same as HV-9377.
- * 2HV9420, Control Valve · HPSI Header #1 to RCS Loop 2 Hot Leg Same as HV-0396.
- * 2HV9434, Control Valve PPSI Header #2 to RCS Loop 1 Hot Leg Same as HV-0396.
- * S21204MU012 (4-012-C-358), HPSI Pump 2P017 Discharge Check Valve This valve cannot be exercised while the plant is at power because the HPSI pump cannot overcome RCS Pressure. To exercise disc to fully open position requires 200 GPM.
- * S21204MU015 (4-015-C-358), HPSI Pump 2P019 Discharge Check Valve Same as S21204MU012.
- * S21204MU016 (4-016-C-358), HPSI Pump 2P018 Discharge Check Valve Same as S21204MU012.
- * S21204MU017 (4-017-C-553), HPSI Pumps 2P018 & 2P019 to #2 High Pressure Header Same as S21204MU012.
- * S21204MU018 (3-018-A-551), HPSI Combined Header to RCS Loop 1A Check Valve

 Exercising this valve while the plant is at power would result in non-compliance with Technical Specification 3/4.5.2.

S TINU

- * S21204MU019 (3-019-A-551), HPSI Combined Header to RCS Loop 1B Check Valve Same as S21204MU018.
- * S21204MU020 (3-020-A-551), HPSI Combined Header to RCS Loop 2A Check Valve
 Same as S21204MU018.
- * S21204MU021 (3-021-A-551), HPSI Combined Header to RCS Loop 2B Check Valve Same as S21204MU018.
- * S21204MU024 (10-024-C-406), LPSI Pump 2P015 Discharge Stop Check Valve While the plant is at power, LPSI pumps cannot overcome RCS prassure. Additionally, aligning the system discharge to the RWST would defeat both trains of LPSI.
- * S21204MU025 (10-025-C-406), LPSI Pump 2P016 Discharge Stop Check Valve Same as S21204MU024.
- * S21204MU027 (12-027-A-551), Safety Injection Headers to RCS Loop 1A During nower operation there is no full flow path available to stroke test valve. LPSI or HPSI pumps cann.: overcome the RUS pressure. Required 2000 GPM for full Stroke.
- * S21204MU029 (12-029-A-551), Safety Injection Headers to RCS Loop 18 Same as S21204MU027.
- * S21204MU031 (12-031-A-551), Safety Injection Headers to RCS Loop 2A Same as S21204MU027.
- * S21204MU033 (12-033-A-551), Safety Injection Headers to RCS Loop 28 Same as S21204MU027.
- * S21204MU040 (12-040-A-551), Safety Injection Tank T008 Outlet Check Valve

 Opening this valve during power operation is not possible against normal RCS operating pressure. Fartial strcke test is the only to possible during Cold shutdown to system configuration. See Valve Relief Request Number 11.
- * S21204MU041 (12-041-A-551). Safety Injection Tank T007 Outlet Check Valve Same as S21204MU040.
- * S21204MU042 (12-042-A-551), Safety Injection Tank T009 Outlet Check Valve Same as S21204MU040.

UNIT 2

- * S21204MU043 (12-043-A-551), Safety Injection Tank T010 Outlet Check Valve Same as S21204MU040.
- * S21204MU072 (8-072-A-552), LPSI Check Valve to RCS Loop 1A
 There is no flow path to exercise this valve during power operation.
 LPSI pumps cannot overcome RCS Pressure while the plant is at power.
- * S21204MU073 (8-073-A-552), LPSI Check Valve to RCS Loop 18 Same as S21204MU072.
- * S21204MU074 (8-074-A-552), LPSI Check Valve to RCS Loop 2A Same as S21204MU072.
- * S21204MU075 (8-075-A-552), LPSI Check Valve to RCS Loop 2B Same as S21204MU072.
- * S21204MU087 (16-087-C-675), Spray Pump 2P013 Suction Check Valve Same as S21204MU012.
- * S21204MU088 (16-088-C-675), Spray Pump 2P012 Suction Check Valve Same as S21204MU012.
- * S21204MU152 (3-152-A-551), To #2 HPSI Header Valve cannot be stroked at power because the HPSI pumps cannot overcome RCS Pressure. Additionally, opening the HPSI Header Isolation valve during power operation would result in non-compliance with Technical Specification 3/4.5.2.
- * S21204MU155 (3-155-C-551), HPSI Header #1 to RCS Loop 2 Hot Leg Full or partial stroke exercising of this valve while the plant is at power would result in non-compliance with Technical Specification 3/4.5.2. In addition, while the plant is at power, HPSI pumps cannot overcome RCS pressure.
- * S21204MU156 (3-156-A-551), HPSI Header #1 to RCS Loop 2 Hot Leg Inlet Check Valve Same as S21204MU155.
- * S21204MU157 (3-157-A-550), HPSI Header #2 to RCS Loop 1 Hot Leg Same as S21204MU155.
- * S21204MU158 (3-158-A-550), HPS1 Header #1 to RCS Loop 2 Hot Leg Same as S21204MU155.

ENGINEERING PROCEDURE S023-V-3.5
REVISION 7 PAGE 91 OF 208
ATTACHMENT 3
TCN 7-16

UNIT 2

- ** System: Steam
- * 2HV8204, Steam Generator E039 Main Steam Isolation Valve
 Full stroke exercising at full plant power would cause a loss of £7%
 of our heat removal from the primary coolant system, a reactor trip on
 assymetric power in the core and actuation of the steam and
 prissurizer (primary) reliefs.
- * 2HV8205, Steam Generator E088 Main Steam Isolation Valve Same as HV-8204.
- * 2HV8419, Main Steam Dump to Atmosphere
 Full stroke exercising of this valve during power operation could
 result in a reactor plant transient due to energy released via the
 steam dump.
- * 2HVB421, Main Steam Dump to Atmorphere Same as HV-8419.

NUCLEAR URGANIZATION E CMA S STINU

ENGINEERING PROCEDURF 5023-V-3.5 RZVISION 7 ATTACHMENT 4 TCN 7-16

PAGE 92 OF 108

IMDEX

System																								Page
Air Conditioning System .												*						*	4		*		*	93
Auviliary Roi or System				-			4		4		4	*	4			4			4	8.	18.7	3		. 93
Auxiliary Feedwater			*			4	à.	*	*		*	*	4	7	16.	4	9	16	4	*	9.	*		27
Boric Acid Makeup				4	1		00		14.	4		*	8/	*		*	*	16		*	*	*	*	96
Chemical and Volume Control			4		4	4	4		*	14.	7	4	*	4	4.	+	*	4		*	*	4	*	97
Chilled Water					*		+	4		*			4		4.		8	v		*	8	4	*	99
Component Lonling Water								4				4	*	*	*	¥.	1	*	4	÷		*	*	99
Cundensate and Feedwater .											4	4	9	*	*		4	*	4	4	*	*	4	106
Containment HVAC (Normal) .						18		*			*	*	4			*	+	*		4	1	他	Á.	107
Containment Spray					4					16			*	*		+	4			×	14.		*	100
Diesel Fuel Oil System	1			4								*	*	4			*	4	*	*	4.	4	.9	110
Diesel Generator Air Start				4				4		*		4	*	4		4	4	*	4	*	*	*	*	111
Diesel Generator System			4								¥	1		1		*	4	. 4	. 4.	4		*	8.	113
Fire Protection	71						4		4			4				×.	*	*	*	3	*	*	*	113
Fue' Stor. Pool & Refueling		*			4		4		4	4	,	4	*		+		4	*	4					113
Gas Radwaste					4	4				V	,				1	*	*	1	*	*	4		4.	114
Liquid Radwaste									-			*		+		*		9	*	ń	*	*		114
Nitrogen Sas			*			*		,	*		*	+	4	*	4	*	*	*	*	×	4		*	115
Nuclear Sampling				6						*	4.	÷		+		*	*	¥	*	*	*	٧	*	116
Nuclear Service Water				1	*	4	. 0	×		*	*	*	*	*	*		*	*	*	*	4		4	119
Reacto: Coolant				*	*		4	*	*			*	4	*	*		*	*	*	×	*	*	+	120
Rosp. & Service Air System	18			*	4	*					*	*	*		*	3	×	*			*		*	123
Safety Injection																								
Salt Water Cooling			×		×		1		*		4	+	+	*		+		*	*		*	*		136
Steam																								139
Sumps and Drains	1		*	*	*					. 4		*	*	16		d.	4	-1		(8	*		*	143

ENGINEERING PROCEDURE S023-V-3.5 REVISION 7 ATTACHMENT 4 TCN 7-16

PAGE 93 OF 208

UNIT 3 10/16/91

Code) Class (Sec (I Size Cat (in.)	Valve and Actuator Norm Type Pos.	Test Type and Str. Mode Time	Test Organization (Procedure)	Notes and Valve Relief Requests
** Syste	em: Air C	Conditioning Sy	stem		
* 3HCV9	9918, Hyd	irogen Purge Ex	haust Control	Valve	
2 (Dwg.	4017283	BTF/M C	AT/RR	T'S023-V-3.13)	10
* 3HCV	9945, Hye	irogan Purge Un	it A-080 Disci	harge	
(Eng.	4017295 A 6	BTF/M C	Mfg.: Fisher AT/RR	T(S023-V-3.13)	ju .
* 3HV99	917, Cont	ainment Hydrog	en Purge Out 1	et	
(Dwg.	4017289 A 6	SO3/G-3) Valve BYF/MO C	Mfg.: Fisher AT/RR	7 (SO23-V-3.13)	6&10
* 3HV99	946, Cont	ainment Hydrog	en Purge Inle	t	
2 /	4017285 A 6	BTF/MO C	Mrg.: Fisher AT/RR	T(S023-V-3.13)	5810
* \$3150	BEDUMOO	(3/4-038-C-396)	, ILRT Pressu	rization Connection	n
2 Dwg.	A 3/4	GL/M C	AT/RR	T(5023-V-3.13)	10
* 53150	OOMUO39	(3/4-039-0-396)	, ILRT Pressu	rization Connection	n
2	4017180 A 3/4	Gr/W C	AT/RR	rization Connectionst St T(SO23-V-3.13)	10
		liary Boiler Sy			
* 5313	12MU037	(2-037-C-38	7), Auxiliary	Steam Inside Cont	ainment
(Dwg.	401690	Isolation V SO3/D-4) Valve	Mfg.: Vogt	T(S023-V-3.13)	
5	A 2	GA/M C	AT/RR	T(S023-V-3.13)	10
* 5313	12MU038	(2-038-C-38 Isolation V	17), Auxiliary	Steam Outside Con	tainment
S (Dwg.	: 40169C: A 2	SO3/E-4) Valve GA/M C	Mfg.: Vogt	T(S023-V-3.13)	10

ENGINEERING PROCEDURE S023-V-3.5 REVISION 7 ATTACHMENT 4 TCN 7-16

PAGE 94 OF 208

UNIT 3 10/16/91

Code Class	Sec XI Size Cat (in.	Valve and Actuator) Type	Norm Pos.	Test Type and Mode	Str. Time	Test Organization (Procedure)	Notes and Valve Relief Requests
** Sys	tem: Auxi	liary Feed	water				
* 3HV	4705, S/G	E088 Auxi	liary	Feedwat	er Cor	ntrol Valve	
3 3 3 3	8 6 8 6 8 6	SO3/E-3) Va GL/MO GL/MO GL/MO	Ç	BTC/OP	33.5	0(S023-3-3.30) 0(S023-3-3.30) 0(S023-3-3.30)	3,4&6 3,4&6 3,4&6
* 3HV	4706, S/6	E089 Auxi	liary	Feedwat	er Co	ntrol Valve	
3	B 6 B 6 B 6	SO3/D-3) V GL/MO GL/MO GL/MO	C	BTC/OP BTO/OP	33.5	0(S023-3-3.30) 0(S023-3-3.30) 0(S023-3-3.30)	3,4&6 3,4&6 3,4&6
* 3HV	4712, Aux	iliary Fee	dwate	r Pump 3	P504 I	Discharge to Steam	Generators
3 3 3	8 4 8 4 8 4	GL/MO	C	BTC/OP	36 36	0(S023-3-3.30) 0(S023-3-3.30) 0(S023-3-3.30)	3&6 3&6 3&6
		(SO3/B-3) V				Discharge to Steam	Generators
3 3 3	B 4 B 4 B 4	GL/MO GL/HO	C	BTC/OP BTO/OP	36 36	O(S023-3-3.30) O(S023-3-3.30) O(S023-3-3.30)	3&6 3&6 3&6
						dwater to S/G E088	
2 2 2	B 6 B 6 B 6 B 6	SO3/F-1) V GL/EH GL/EH GL/EH GL/EH	CCC	BTC/OP BTO/OP FSTC/OP	10	0(S023-3-3.30) 0(S023-3-3.30) 0(S023-3-3.30) 0(S023-3-3.30)	3 3 3 3
* 3HV	4715, Iso	lation Val	ve -	Auxiliar	y Fee	dwater to S/G E089	
2 2 2 2		SO3/D-2) V GL/MO GL/MO GL/MO	C	BTC/OP	10	0(\$023-3-3.30) 0(\$023-3-3.30) 0(\$023-3-3.30)	3,4&6 3,4&6 3,4&6

ENGINEERING PROCEDURE S023-V-3.5
REVISION 7 PAGE 95 OF 208
ATTACHMENT 4
TCN 7-16

UNIT 3 10/16/91

Sec Code XI Size Class Cat (in.)	Valve and Actuator Norm Type Pos.	Test Type and Str. Mode Time	Test Organization (Procedume)	Notes and Valve Relief Requests
(Dwg + 4016085	03/F-31 Valve	Mfo . Gimpel	e Trip and Throttle Inc. O(SO23-3-3.30) O(SO23-3-3.30)	
* 3HV4730, Isol	ation Valve -	Auxiliary Fee	O(SO23-3-3.30) O(SO23-3-3.30) O(SO23-3-3.30)	
* 3HV4731, Isol	ation Valve -	Auxiliary Fee	dwater to S/G E089	
* 3HV4 62, Bypa (Dwg.: 40160AS 3 B 4 3 B 4 3 B 4	03/F-3) Valve	Mfg.: Contro	1 Components 0(S023-3-3.30) 0(S023-3-3.30) 0(S023-3-3.30)	3
* 3HV4763, Bypa (Dwg.: 40160AS 3 B 4 3 B 4 3 B 4	03/C-3) Valve	Mfg . Contro	1 Components 0(\$023-3-3.30) 0(\$023-3-3.30) 0(\$023-3-3.30)	3
* S31305MU121 ((Dwg.: 40160AS	6-121-D-598), 03/0-3) Valve	AFP 3P140 Sup Mfg.: Anchor	ply to S/G E089	5
(Dwg.: 40160AS	03/B-5) Valve	Mfg.: Anchor	charge Check Valve /Darling O(SO23-3-3.31.2)	
(Dwg.: 40160AS	03/G-4) Valve	Mfg.: Anchor	charge Check Valve /Darling O(S023-3-3.31.2)	

ENGINEERING PROCEDURE S023-V-3.5
REVISION 7 PAGE 96 OF 208
ATTACHMENT 4
TCN 7-16

UNIT 3 10/16/91

Code XI	Size t (in.)	Actuator	Norm	and	Str.	Test Organization (Procedure)	Notes and Valve Relief Requests
(Dwg.: 4	10160AS	03/E-3) Va	Ive A	Mfg.: Ar	chor/	charge Check Valve /Darling O(SO23-3-3.31.2)	
** System	Boric	Acid Make	up				
(Dwg.: 4	40125BS	up Water t 03/G-2) Va GL/AO GL/AO	lve M	Mfg.: IT BTC/OP	2	0(S023-3-3.30) 0(S023-3-3.30) 0(S023-3-3.30)	
(Dwg.: 4 3 B 3 B	40125AS 2 2	03/D-8) Va GL/A0 GL/A0	lve M C	Mfg.: IT BTC/OP FSTC/OP	2	0(S023-3-3.30) 0(S023-3-3.30) 0(S023-3-3.30)	k T072
(Dwg.: -	0125AS	03/B-5) Va	Ive !	Mfg.: Ta	rget		
(Dwg.: 4	40125AS	03/D-1) Va	lve M	Mfa.: Il	T	O(S023-3-3.30) O(S023-3-3.30) O(S023-3-3.30)	
(Dwg.: 4	40125AS	03/8-4) Va GA/MO	lve ?	Mfg.: Ta BTO/CS	irget 12	ion Header Control Rock O(S023-3-3.31) O(S023-3-3.31)	Valve 5&6 5&6
(Dwg.: 4	40125BS	03/E-51 Va	Tve !	Mfq.: Ta	arget	icn Control Valve Rock O(S023-3-3.31) O(S023-3-3.31)	5&6 5&6

UNIT 3 10/16/91

	Size	Valve and Actuator Type		Test Type and Mode		Test Organiza (Procedu		Notes Valve Relie Reque	f
	0125BS	(3-033 Check 03/B-5) V CK/SA	Valve alve	Mfq.: A	loyco	d Makeup /Walworth O(SO23-1	1	Disc	harge
		Check 03/C-5) V	Valve alve	Mfg.: A	loyco	d Makeup /Walworti O(SO23-	1	Disc	harge

- * S31218MU046 (3-046-Y-675), Demin Water to Boric Acid Mixing Tee (Dwg.: 40125BS03/G-3) Valve Mfg.: Aloyco/Walworth 2 C 3 CK/SA C CVTC/OP T(S023-V-3.5.4)
- ** System: Chemical and Volume Control

	23000		mreet and					
*			arging Pum ASO3/D-3)				eat Exchanger E06	53
2	A	2	GL/AO	0	AT/RR		T(S023-V-3.13)	5810
2	A	2	GL/AO	0	BTC/CS	8	0(5023-3-3 31)	5810
2	Δ	2	GL/AD	0	BTO/CS	25	0(5023-3-3 31)	5810
2	Δ	2	GL/AO	0	ESTOVES		0(5023-3-3 31)	5810
2	A	2	CL/AO	0	DIT/DD		T(S023-V-3.13) O(S023-3-3.31) O(S023-3-3.31) O(S023-3-3.31) O(S023-3-3.31)	5810
	- ^	6	uL/ NO	U	LI 1/ KK		0(2022-2-2.31)	2010
							3 to Letdown Heat	Exchanger
0	(DWG.	40123	ASU3/F-3)	vaive	MTG.: F	sner	T/C000 W 0 101	2 5810
2	A .	2	GL/AU	0	AI/KK		1 (5023-V-3.13)	3,5810
2	A	2	GL/AU	0	BIL/CS	4	0(5023-3-3.31)	3,5810
6		2	GL/AU	0	121C/C2		0(5023-3-3.31)	3,5810
2	A	2	GL/AU	0	PI1/RK		T(S023-V-3.13) 0(S023-3-3.31) 0(S023-3-3.31) 0(S023-3-3.31)	3,5&10
*	3LV022	27B, 1	CT Outlet	Valve				
	(Dwg.:	40124	AS03/B-5)	Valve	Mfg.: T	arget	Pock	
2	B	4	GA/MO	0	BTC/CS	11	0(5023-3-3.31)	5&6
2	8	4	GA/MO	0	PIT/RR	77	0(5023-3-3.31)	5&6
							-1	
*	3TV92	67, L	etdown Cont	tainme	nt Isolat	ion V	alve	
	(Dwg.:	4012	3AS03/F-3)	Valve	Mfq.: W	estin	ghouse, Inc.	
2	Δ	2	GA/MO	0	AT/PR		T/S023-V-3 131	3,5,6&10
2	A	2	GA/MO	0	BTC/CS	13	0(5023-3-3.31)	3,5,6810
2	A	2	GA/MO	C	PIT/RR		O(SO23-3-3.31) O(SO23-3-3.31)	3.5.6810

2

2

2

ENGINEERING PROCEDURE SO23-V-3.5 PAGE 98 OF 208 REVISION 7 ATTACHMENT 4 TCN 7-16

UNIT 3 10/16/91

Inservice Testing Program for Valves San Onofre Nuclear Generating Station (Test Org's: M=Maintenance, O = Operations, T = Technical) Discussion of Cold Shutdown Intervals, See Next Att.

Notes and Test Valve Туре Valve Sec and Type Test
Code XI Size Actuator Norm and Sr. Organization
Class Cat (in.) Type Pos. Mode Time (Procedure) Test Relief Requests * S31208MU015 (4-015-C-675), VCT to Charging Pump Suction Check Valve (Dwg.: 40124AS03/8-4) Valve Mfg.: Aloyco/Walworth 2 C 4 CK/SA O CVTC/CS O(:)23-3-3.31.2) * S31208MU017 (2-017-C-554), Charging Pump 3P192 Discharge Check Valve (Dwg.: 40124BS03/C-3) Valve Mfg.: Kerotest 2 C 2 CK/SA C CVTO/OP *(SO23-V-3.5.4) * S31208MU067 (2-067-C-554), Charging Pump 3P190 Discharge Check Valve (Dwg.: 40124BS03/G-2) Valve Mfg.: Kerotest CK/SA C CVTO/OP T(S023-V-3.5.4) C 2 * S31208MU069 (2-069-C-554), Charging Pump 3P191 Discharge Check Valve (Dwg.: 40124BS03/D-2) Valve Mfg.: Kerotest C 2 CK/SA C CVTO/OP T(SO23-V-3.5.4) (3-082-C-675), Grav Feed - BAMU Tanks to Charging Pump * S31208MU082 3P190 Suction (Dwg.: 40124BS03/H-5) Valve Mfg.: Aloyco/Walworth CK/SA C CVTO/CS O(SO23-3-3.31.2) 5 2 C 3 * S31208MU083 (3-083-C-675), BAMU Pumps to Charging Pumps Suction Header (Dwg.: 40124BS03/F-7) Valve Mfg.: Aloyco/Walworth C 3 CK/SA C CVTO/CS O(SO23-3-3.31.2) 5 * S31208MU122 (2-122-C-554), Charging Pumps to Regen HX E063 Check Valve (Dwg.: 40123ASO3/D-4) Valve Mfg.: Kerotest AC 2 CK/SA C AT/RR T(SO23-V-3.13) 10 VRR-14 AC 2 CK/SA C CVTC/RR T(SO23-V-3.13) 10 VRR-14 AC 2 CK/SA C CVTO/OP T(SO23-V-3.5.4) 10 VRR-14 2 * S31208MU130 (2-130 (-334), Contmt Isol. - Chg Pump Disch to Aux. ay Regen HX Bypass (Dwg.: 40123ASO3/B-2) Valve Mfg.: Kerotest A 2 GL/M C AT/RR
A 2 GL/M C BTC/CS
A 2 GL/M C BTO/CS
A 2 GL/M C PIT/RR 2 T(S023-V-3.13) 7810

O(SO23-3-3.31)

0(5023-3-3.31)

0(\$023-3-3.31)

7810

7810

7810

UNIT 3

Code Class	Sec XI Siz Cat (in	Valve and ze Actuator n.) Type	Norm Pos.	Test Type and Mode	Str. Time	Test Organization (Procedure)	Notes and Valve Relief Requests
** Sys	tem: Ch	illed Water					
(Dwg	.: 40170 A 8	DASO3/G-4) 1 BTF/MO	/alve M	fg.: Fi	sher	T(S023-V-3.13)	3,6&10
2 2	A 8 A 8	BTF/MO BTF/MO	0	PIT/RR	14	O(S023-3-3.30) O(S023-3-3.30)	3,6810
	.: 40170 A 8	DASO3/G-2) N	alve N	AT/RR	sher	T(S023-V-3.13) O(S023-3-3.30)	3&10 3&10 3&10 3&10
		ontainment (DASO3/F-2)				poling Return	
2	A 8	RTF/AD	0	AT/RR		T(S023-V-3.13) O(S023-3-3.30) O(S023-3-3.30) O(S023-3-3.30)	3&10 3&10 3&10 3&10
		ontainment 1 DASO3/F-4) N				poling Return Pen	# 46
2 2 2	1 8	BTF/MO	0	AT/RR		T(S023-V-3.13) 0(S023-3-3.30) 0(S023-3-3.30)	3,6&10 3,6&10 3,6&10
** Sys	tem: Com	mponent Coo	ling Wa	ater			
(Dwg	.: 40127	7ASO3/F-2) N BTF/AO BTF/AO BTF/AO	Valve A	Mfq.: Fi	sher		
(Dwg	B 10 B 10		Valve N O O	Mfg.: F1 BTC/OP FSTC/OP	sher 5	O(S023-3-3.30) O(S023-3-3.30) O(S023-3-3.30)	

UNIT 3 10/16/91

Sec Code XI Size Class Cat (in.)	and Actuator Norm	Test Type and Str. Mode Time	Test Grganization (Procedure)	Notes and Valve Relief Requests
* 3HCV6539, CCW (Dwg.: 40127AS 3 B 10 3 B 10 3 B 10	03/R-21 Value	Mfa.: Fisher	0(S023-3-3.30) 0(S023-3-3.30) 0(S023-3-3.30)	
/Dwm . 40127FS	03/6-31 Valve	Mfn · Fisher	T(S023-V-3.13) O(S023-3-3.31) O(S023-3-3.31)	
(Dwg.: 40127DS	O3/E-7) Valve	Mfg.: Fisher	O(SO23-3-3.31) O(SO23-3-3.31) O(SO23-3-3.31)	14
(Dwa.: 40127DS	03/D-7) Valve	Mfg.: Fisher	O(SO ² 3-3.31) O(SO ₂ 3-3.31) O(SO ₂ 3-3.31)	
(Dwg.: 40127FS	03/C-5) Valve	Mfg.: Fisher	T(SO23-V-3.13) O(SO23-2-3.31) O(SO23-3-3.31)	
* 3HV6218, CCW (Dwg.: 40127AS 3 B 28 3 B 28 3 B 28	BTF/AO O			5&14 5&14 5&14
(Dwg.: 40127AS 3 B 28				5&14 5&14 5&14

ENGINEERING PROCEDURE S023-V-3.5
REVISION 7 PAGE 101 OF 208
ATTACHMENT 4
TCN 7-16

UNIT 3 10/16/91

Code Class	Sec XI Size Cat (in.)	and Actuator Nor	Test Type m and Str. . Mode Time	Test Organization (Procedure)	Notes and Valve Relief Requests
* 3HV	5223, Iso1	ation Valve -	CCW Non-Criti	ical Loop Containm	ent Inlet
(Dwg 2 2 2	A 10 A 10 A 10	BTF/MO O BTF/MO O	Mfg.: Fisher AT/RR BTC/CS 15 PIT/RR	T(2023-V-3.13)	3,5,6&10 3,5,6&10 3,5,6&10
* 3HV	6236, Cont	ainment Isola	tion - CCW Nor	-Critical Loop Re	turn
2 2	A 10 A 10 A 10	BTF/MO 0	Mfg.: Fisher AT/RR BTC/CS 15. PIT/RR	T(S023-V-3.13) 0(S023-3-3.31) 0(S023-3-3.31)	3,5,6&10 3,5,6&10 3,5,6&10
				rgency Cooling Uni	t E-401
	A 10	GA/MO O GA/MO O GA/MO O GA/MO O GA/MO O		T(S023-V-3.13) 0(S023-3-3.30) 0(S023-3-3.30) 0(S023-3-3.30)	
				mergency Cooling U	Unit E-401
2	A 10 A 10		AT/RR BTC/OP 12	0(\$023-3-3.30)	3,6&10
				rgency Cooling Uni	t E-400
(Dwg 2 2 2 2 2	A 10	GA/MO O GA/MO O GA/MO O GA/MO O GA/MO O		T(S023-V-3.13) 0(S023-3-3.30) 0(S023-3-3.30) 0(S023-3-3.30)	3,6&10 3,6&10 3,6&10 3,6&10
				mergency Cooling L	Unit E-400
(Dwr, 2 2 2 2	A 10 A 10	GA/MO C GA/MO C	Mfg.: WKM AT/RR BTC/OP 12	T(S023-V-3.13) O(S023-3-3.30)	3,6&10 3,6&10
2 2	A 10 A 10	GA/MO C GA/MO C	BTC 'OP 12 PIT/RR	O(SO23-3-3.30) O(SO23-3-3.30)	3,6&10 3,6&10

ENGINEERING PROCEDURE S023-V-3.5
REVISION 7 PAGE 102 OF 208
ATTACHMENT 4
TCN 7-16

UNIT 3 10/16/91

Code Class		valve and ze Actuator	Norm Pos.		Str. Time	Test Organiz (Proced	ation	Notes and Valve Relief Requests
		omponent Coo				ency Co	oling Unit	E-399
2 2 2	A 10 A 10	2BSO3/D-2) V GA/MO GA/MO GA/MO GA/MO	0 0 0	BTO/OP	12			3,6&10 3,6&10 3,6&10 3,6&10
* 3HV	5371, C	omponent Coo				ergency	Cooling Un	it E-399
2	A 10	2BS03/C-2) V GA/MO		and the state of t	M	T(S023-	V-3.13)	3,6810
2		GA/MO					3-3.30)	3,6&10
2 2 2		GA/MO	C	BTO/OP	12		3-3.30)	3,5&10
2	A 10	GA/MO	C	PIT/RR		0(5023-	3-3.30)	3,6&10
		omponent Coo				gency Co	oling Unit	E-402
				Mfg.: WK		T 0000	W 7 171	0 6010
2	A 10 A 10			AT/RR			V-3.13) 3-3.30)	3,6&10
2	A 10		0	BTO/OP	12	0(5023-	3-3.30)	3,6810
2 2 2	A 10	GA/MO	0	PIT/RR			3-3.30)	3,6&10
		omponent Coo 2BSO3/E-2) V				ergency	Cooling Un	it E-402
2		GA/MO	C	AT/RR		T(S023-	V-3.13)	3,6&10
	A 10	GA/MO GA/MO GA/MO	C	BTC/OP	12		3-3.30)	3,6&10
2	A 10	GA/MO	C	BTO/OP	12		3-3.30)	3,6810
2	A 10	GA/MO	C	P11/KK		0(5023-	3-3.30)	3,6&10
		omponent Coc 7ESO3/F-4) V				CS Heat	Exchanger	E003
3	B 18	BTF/AO	C	BTO/CS	8		3-3.31)	3&5
3	B 18	BTF/AO	C	FSTO/CS		0(S023-	3-3.31)	5
3	p 18	BTF/AO	-	PII/RR		0(8023-	3-3.31)	3&5
* 3HV (Dwg	6501, C	omponent Coc 7ESO3/C-4) V	ling alve	Water from	om SD	CS Heat	Exchanger	E004
3	B 18	BTF/AO	C	BTO/CS	8	O(S023-	3-3.31)	3&5
3 3 3	B 18	BTF/AO	C	FSTO/CS		0(5023-	3-3.31)	3&5
3	8 18	BTF/A0	L	PII/RR		0(2053-	3-3.31)	3&5

ENGINEERING PROCEDURE S023-V-3.5 REVISION 7 ATTACHMENT 4 TCN 7-16

PAGE 103 OF 208

UNIT 3 10/16/91

Se Code XI Class Ca	ec I Size at (in.)	Valve and Actuator Norm Type Pos.	Test Type and Str. Mode Time	Test Organization (Procedure)	Notes and Valve Relief Requests
(Dwg.:	356, CCW 40127BSO	Surge Tank TOO 3/H-5) Valve M SV/SA C	3 Relief Valv Mfg.: Crosby RVT/RR	we M(S023-I-8.88)	2
* 3PSV63 (Dwg.: 3 C	40127BS0	Surge Tank TOO 3/D-5) Valve M SV/SA C	ffg.: Crosby	M(S023-I-8.88)	2
* S31203 (Dwg.:	3MR229, D 40127AS0	rain Valve, CC 3/B-5) Valve M GATE/M C	W Pump P026 Mfg.: Vogt BTO/OP	Orain Line O(Later)	7
/Dwg.:	40127AS0	rain Valve, CC 3/D-6) Valve M GATE/M C	Afg.: Vogt	Orain Line O(Later)	7
(Dwg.:	40127ASO	rain Valve, CC 3/G-5) Valve M GATE/M C	Afg.: Vogt		7
(Dwg.:	40127AS0	3/G-4) Valve A	Afg.: TRW/Mi	24 Discharge Check ssion T(S023-V-3.5.4) O(S023-3-3.31.2) O(S023-3-3.31.2)	Valve
(Dwg.: 3 C	40127AS0 28 28	SDCK/SA OC SDCK/SA OC	Mfg.: TRW/Mi CVPO/OP CVTC/CS	26 Discharge Check ssion T(S023-V-3.5.4) O(S023-3-3.31.2) O(S023-3-3.31.2)	Valve

ENGINEERING PROCEDURE \$023-V-3.5 REVISION 7 ATTACHMENT 4 TCN 7-16

PAGE 104 OF 208

THIS PAGE LEFT

BLANK

INTENTIONALLY

UNIT 3 10/16/91

Inservice Testing Program for lives

fro Nuclear Generating Station

(Test Orc intenance, O * Operations, T * Technical)

Disc on Cold Shutdown Intervals, See Next Att.

Notes and Valve Test Valve Type Test and Code XI Size Actuator Norm and Str. Organization Class Cat (in.) Type Pos. Mode Time (Procedure) Relief Requests * \$31203MU103 (28-103-D-725). CCW Pump 3P025 Discharge Check Valve (Dwg.: 40127AS03/D-4) Valve Mfg.: TRW/Mission 28 SDCK/SA OC CVPO/OP T(SO23-V-3.5.4) SDCK/SA OC CVTC/CS O(SO23-3-3.31.2) SDCK/SA OC CVTO/CS O(SO23-3-3.31.2) C 3 28 3 SDCK/SA OC C 28 (1-264-D-627), Nitrogen Supply to Component Cooling \$31203MU264 Water Surge Tank T003A (Dwg.: 40127bS03/H-5) Valve Mfg.: Kerotest

AC 1 CK/SA C AT/RR T(S023-SPT-2)

AC 1 CK/SA C CVTC/RR T(S023-SPT-2) 13 13 (1-265-D-627), Nitrogen Supply to Component Cooling \$31203MU265 Water Surge Tank T003A (Dwg.: 40127BS03/G-5) Valve Mfg.: Kerotest CK/SA C AT/RR T(SO23-SPT-2) CK/SA C CVTC/RR T(SO23-SPT-2) AC 1 AC * 531203MU266 (1-266-D-627), Nitrogen Supply to Component Cooling Water Surge Tank T004B (Dwg.: 401278S03/D-5) Valve Mfg.: Kerotest CK/SA C AT/RR CK/SA C CVTC/RR AC 1 T(S023-SPT-2) 3 AC I T(S023-SPT-2) 13 \$31203MU267 (1-267-D-627), Nitrogen Supply to Component Cooling Water Surge Tank T004B (Dwg.: 40127BS03/D-5) Valve Mfg.: Xerotest AC 1 CK/SA C AT/RR T(S023-SPT-2) 13 CK/SA C CVTC/RR AC T(S023-SPI-2) 13 S31203MU268 (1-268-D-627), Nuclear Plant Service Water Supply to CCW Loop A (Dwg.: 40127BS03/N-3) Valve Mfg.: Anchor Darling CK/SA & AT/RR CK/SA C CVTC/RR AC 1 T(SOZ3-SPT-2) AC 1 T(S023-SPT-2)

* S31203MU269 (1-269-D-627), Nuclear Plant Service Water Supply to CCW Loop B

(Dwg.: 401278S03/B-3) Valve Mfg.: Anchor Darling 3 AC 1 CK/SA C AT/RR T(S023-SPT-2) 3 AC 1 CK/SA C CVTC/RR T(S023-SPT-2) UNIT 3 10/16/91

Code Class	Sec XI Siz Cat (in	a Actuator	Norm i	est ype ind Mode	Str.	Test Organization (Procedure)	Notes and Valve Relief Requests
** Sys	tem: Con	densate and	Feedwa	ter			
/ Dwn	40156	G E089 Feed BS03/B-6) V GA/A0 GA/A0 GA/A0	alve Mi	fa.: Co	pes \	/ulcan, Inc. O(SO23-3-3.31) O(SO23-3-3.31) O(SO23-3-3.31)	3 3 3
(Dwn	· 40156	G EO88 Feed BSO3/E-6) V GA/AO GA/AO GA/AO	Alva M	fa : Co	ines !	/ulcan, Inc. O(SO23-3-3.31) O(SO23-3-3.31) O(SO23-3-3.31)	3 3 3
(Dwg	8 20	B503/F-4) V GA/EH	alva M	Fy.: WK BTC/CS	(M	O(SO23-3-3.31) O(SO23-3 3.31)	3&5 3&5
(Dwo	.: 40156	BS03/F-2) V	alve M	fa.: WK	CM	O(SO23-3-3.31) O(SO23-3-3.31) O(SO23-3-3.31) O(SO23-3-3.31)	
(Dwg	B 20	BS03/B-4) V GA/EH	alve M	fg.: Wk BTC/CS	(M 10	0(S023-3-3.31) 0(S023-3-3.31)	3&5 3&5
		BS03/B-2) V GA/EH GA/EH	alve M O O	fg.: Wh	10	O(SO23-3-3.31) O(SO23-3-3.31) O(SO23-3-3.31)	3&5 3&5 3&5
	305MU036 0:: 40141 C 20 C 20	E089 AS03/C-7) V	alve M	fg.: At	nchor	Darling M(SO23-I-6.160) O(Later)	Steam Generator 1&18 VRR-20 1&18 VRR-20
			A	TTACHMEN	NT A		PAGE 15 OF 52

ENGINEERING PROCEDURE S023-V-3.5
REVISION 7 PAGE 107 OF 298
ATTACHMENT 4
TCN 7-16

UNIT 3 10/16/91

Code XI Class Ca	Size	and Actuator Norm	Test Type and Str. Mode Time	Test Organization (Procedure)	Notes and Valve Relief Requests
(Dwg.:	40141ASO	3/B-7) Valve N	ffg.: Anchor/	ve at Steam General 'Darling O(SO23-3-3.31.2)	
		E088		Check Valve at St	team Generator
2 C	20	3/F-7) Valve M CK/SA O CK/SA O	CVTC/RR	M(S023-I-6.160)	1&18 VRR-20 1&18 VRR-20
(Dwg.:	40141ASO	3/F-7) Valve F	Afg.: Anchor	ve at Steam General /Darling O(SO23-3-3.31.2)	
** System	n: Contai	nment HVAC (No	ormal)		
10wn	40171450	3/R-5) Valve P	Mfo.: Fisher	T(S023-V-3.13) O(S023-3-3.30) O(S023-3-3.30) O(S023-3-3.30)	3&10 3&10 3&10 3&10
(Dwg.:	40171AS0	3/B-4) Valve I	Mfg.: Fisher	T(S023-V-3.13) O(S023-3-3.30) O(S023-3-3.30) O(S023-3-3.30)	3&10 3&10 3&10 3&10
(Dwg.:	40171ASC	3/D-3) Valve I	Mfg.: Fisher	T(S023-V-3.13) O(S023-3-3.30) O(S023-3-3.30) O(S023-3-3.30)	3&10 3&10 3&10 3&10

ENGINEERING PROCEDURE S023-V-3.5 REVISION 7 ATTACHMENT 4 TCN 7-16

PAGE 108 OF 208

Code Class	Sec XI S Cat (ize	Valve and Actuato Type	r Norm Pos.	Test Type and Mode	Str.	Test Organizatio (Procedure)	on)	Notes and Valve Relief Requests
* 3HV! (Dwg 2 2 2 2 2	: 401 A 8	71AS0	3/D-7) BTF/AO	Valve 0 0	Containme Mfg.: Fi AT/OP BTC/OP FSTC/OP PIT/RR	sher 5	T(S023-V-3 0(S023-3-3 0(S023-3-3 0(S023-3-3	.13) .30) .30)	3&10 3&10 3&10 3&10
	.: 401 A 4	71ASO 2 2	BTF/AO BTF/AO	Valve C C	Supply Mfg.: Fi AT/OP BTC/CS FSTC/CS	12	T(S023-V-3 0(S023-3-3 0(S023-3-3	31)	3&10 3&10 3&10
	.: 401 A 4	71ASO 2	BTF/MO	Valve	Supply Mfg.: Fi AT/OP BTC/CS		T(S023-V-3 0(S023-3-3		3,6&10 3,6&10
(Dwg	.: 401	71ASO 2	3/C-3) BTF/MO	Valve	Exhaust Mfg.: Fi AT/OP BTC/CS		T(S023-V-3 G(S023-3-3		3,6&10 3,6&10
	A 4 A 4	71ASO 2	3/C-6) BTF/AO	Valve	Exhaust Mfg.: Fi AT/OP BTC/CS FSTC/CS		T(S023-V-3 0(S023-3-3 0(S023-3-3	.31)	3&10 3&10 3&10
** Sys	tem: C	ontai	nment S	pray					
(Dwg 2 2	.: 401 B 1	14BSO 0	3/E-5) GL/MO	Valve C	SDCS Heat Mfg.: Wa BTC/CS BTO/CS PIT/RR	lwort 90	nanger E004 th 0(S023-3-3 0(S023-3-3 0(S023-3-3	.31)	Header 6 6 6

10/16/91

Class Cat (in.) Type Pos. Mode Time (Procedure) Reque	
* 3HV8151, Isolation Valve - SDCS Heat Exchanger E003 to LPSI Head	er
(Dwg.: 40114BS03/f-5) Valve Mfg.: Walworth 2 B 10 GL/MO C BTC/CS 90 O(S023-3-3.31) 6 2 B 10 GL/MO C BTO/CS 90 O(S023-3-3.31) 6 2 B 10 GL/MO C PIT/RR O(S023-3-3.31) 6	
* 3HV9367, Containment Isolation MOV - Spray Header #1	
(Dwg.: 40114BS03/C-4) Valve Mfg.: Target Rock 2 A 8 GA/MO C AT/RR T(S023-V-3.13) 3.6&1 2 A 8 GA/MO C BTO/OP 12 O(S023-3-3.30) 3.6&1 2 A 8 GA/MO C PIT/RR O(S023-3-3.30) 3.6&1	0
* 3HV9368, Containment Isolation MOV - Spray Header #2	
(Dwg.: 40114BS03/G-4) Valve Mfg.: Target Rock 2 A & GA/MO C AT/RR T(S023-V-3.13) 3,6&1 2 A & GA/MO C BTO/OP 12 O(S023-3-3.30) 3,6&1 2 A & GA/MO C PIT/RR O(S023-3-3.30) 3,6&1	0
* S31206MU004 (8-004-C-406), Spray Header #1 Containment Isola	tion
Stop Check Valve (Dwg.: 40114BS03/C-3) Valve Mfg.: Anchor/Darling	100.0
VRR+1	
2 AC 8 SCK/SA C CVPO/RR T(M.O.) 1,5,8 VRR-1	3,10&18
	,10818
* S31206MU006 (8-006-C-406), Spray Header #2 Containment Isola Stop Check Valve	tion
(Dwg.: 40114BS03/G-3) Valve Mfg.: Anchor/Darling 2 AC 8 SCK/SA C AT/RR T(S023-V-3.13) 1,5,8 VRR-1	3,10&18
	3,10&18
	3,10&18

ENGINEERING PROCEDURE S023-V-3.5
REVISION 7 PAGE 110 OF 208
ATTACHMENT 4
TCN 7-16

UKIT 3 10/16/91

Inservice Testing Program for Valves
San Onofre Nuclear Generating Station
(Test Org's: M=Maintenance, D = Operations, T = Technical)
Discussion of Cold Shutdown Intervals, See Next Att.

Valve Test Notes and Sec and Type Test Valve
Code XI Size Actuator Norm and Str. Organization Relief
Class Cat (in., Type Pos. Mode Time (Procedure) Requests

* S31206MU0:0 (2-010-C-329), Containment Spray Pump 3P012 Miniflow

Stop Check Valve
(Dwg.: 40114ASO3/D-3) Valve Mfg.: Rockwell Edwards
2 C 2 SCK/SA C CVTO/OP T(SO23-V-3.5.4)

* S31206MU011 (2-011-C-329), Containment Spray Pump 3P013 Miniflow Stop Check Valve (Dwg.: 40114AS03/H-3) Valve Mfg.: Rockwell Edwards 2 C 2 SCK/SA C CVTO/OP T(S023-V-3.5.4)

* S31206Mb012 (8-012-C-406), Spray Pump 3P012 Discharge Stop Check Valve (Dwg.: 40114AS03/C-3) Valve Mfg.: Anchor/Darling 2 C 8 SCK/SA C CVTC/CS C(S023-3-3.31.2) 5 2 C 8 SCK/SA C CVTO/CS O(S023-3-3.31.2) 5

* S31206MU014 (8-014-C-406), Spray Pump 3P013 Discharge Stop Check Valve (Dwg.: 40114AS03/G-3) Valve Mfg.: Anchor/Darling 2 C 8 SCK/SA C CVTC/CS O(S023-3-3.31.2) 5 2 C 8 SCK/SA C CVTO/CS O(S023-3-3.31.2) 5

* \$31206MU029 (8-029-C-645), Saray Pump 3P012 Discharge to SDCS HV E004 Check Valve

(Dwg.: 40114AS03/C-2) Valve Mfg.: Anchor/Darling 2 C 8 CK/SA C CVTC/RR 0(S023-3-3.31.2) 5 2 C 8 CK/SA C CVTO/CS 0(S023-3-3.31.2) 5

* S312J6MU030 (8-030-C-645), Spray up 3P012 Discharge to SDCS HV E003 Check Valve

(Dwg.: 40114ASO3/G-3) Valve Mfg.: Ancho Darling 2 C 8 CK/SA C CVTC/RR 0(SO23-3-3.31.2) 5 2 C 8 CK/SA C CVTO/CS 0(SO23-3-3.31.2) 5

** System: Diesel Fuel Oil

* \$32421MU039 (2-039-D-627), Diesel Fuel Uil Transfer Pump 3P096
Discharge Check Valve
(Dwg.: 40116AS03/C-6) Valve Mfg.: Kerotest
3 C 2 CK/SA C CVTO/OP T(\$023-V-3.5.4)

UNIT 3 10/16/91

Inservice Testing Program for Valves
San Onofre Nuclear Generating Station
(Test Org's: M=Maintenance, O = Operations, T = Technical)
Discussion of Cold Shutdown Intervals, See Next Att.

Valve Test Notes and Sec and Type Test Valve Code XI Size Actuator Norm and Str. Organization Relief Class Cat (in.) Type Pos. Mode Time (Procedure) Requests

* S32421MU048 (2-048-D-627), Diesel Fuel Oil Transfer Pump 3P093

Discharge Check Valve
(Dwg.: 40116AS03/D-7) Valve Mfg.: Kerotest
3 C 2 CK/SA C • CVTO/OP T(S023-V-3.5.4)

* \$32421MU054 (2-054-D-627), Diesel Fuel Dil Transfer Pump 3P095 Discharge Check Valve (Dwg.: 40116AS03/C-3) Valve Mfg.: Kerotest 3 C 2 CK/SA C CVTO/OP T(S023-V-3.5.4)

* S32421MUD63 (2-063-D-627), Diesel Fuel Transfer Pump 3P094 Discharge Check Valve (Dwg.: 40116AS03/D-4) Valve Mfg.: Kerotest 3 C 2 CK/SA C CVTO/OP T(S023-V-3.5.4)

** System: Diesel Generator Air Start

* 3HV5931A, Diesel Generator 3G002, 20 Cyl., Air Start Relay Valve (Dwg.: 40110AS03/E-1) Valve Mfg.: Later 3 B GL/AO C BTO/OP 10 O(S023-3-3.23) 17

* 3HV5931B, Diesel Generator 3G002, 16 Cyl., Air Start Relay Valve (Dwg.: 40110BS03/E-2) Valve Mfg.: Later 3 B GL/AO C BTO/OP 10 O(S023-3-3.23) 17

* 3HV5931C, Diesel Generator 3G002, 20 Cyl., Air Start Relay Valve (Dwg.: 40110AS03/E-2) Valve Mfg.: Later 3 B GL/AO C BTO/OP 10 O(S023-3-3.23) 17

* 3HV5931D, Diesel Generator 3G002, 16 Cyl., Air Start Relay Valve (Dwg.: 40110BS03/E-1) Valve Mfg.: Later 3 B GL/AO C BTO/OP 10 O(S023-3-3.23) 17

* 3HV5931E, Diesel Generator 3G003, 20 Cyl., Air Start Relay Valve (Dwg.: 40110CS03/E-1) Valve Mfg.: Later 3 B GL/AO C BTO/OP 10 O(3023-3-3.23) 17

* 3HV5931F, Diesel Generator 3G003, 16 Cyl., Air Start Relay Valve (Dwg.: 40110DS03/E-2) Valve Mfg.: Later 3 B GL/AO C BTO/OP 10 O(S023-3-3.23) 17

ENGINEERING PROCEDURE S023-V-3.5
REVISION 7 PAGE 112 OF 208
ATTACHMENT 4
TON 7 = 16

UNIT 3 10/16/91

Discus	sion of Cold S	hutdown inter	Agis, see Mext Wit	
Sec Code XI Size Class Cat (in.)	Valve and Actuator Norm Type Pos.	Type and Str.		Notes and Valve Relief Requests
(Dwg : Aniincs	03/F-21 Value	Mfg. ! later	., Air Start Relay	
* 3HV5931H, Die (Dwg.: 40110DS	sel Generator	3G003, 16 Cyl	., Air Start Relay	Valve
3 B	GL/AO C	BTO/OP 10	0(5023-3-3.23)	17
* 3HY5955A1, A1 (Dwg.: 40110AS	r Start Sol	Diesel Gener	ator 3G002, 20 Cy1	., Right Bank
NA B	3-Way/SO C	BTO/OP 10	0(S023-3-3.23)	٠.7
* 3HY595581, Ai (Dwg.: 40110BS			ator 3G002, 16 Cy1	., Left Bank
NA B	3-Way/SO C	BTO/OP 10	0(5023-3-3.23)	17
(Dwg.: 40110AS	03/E-2) Valve	Mfg.: MKW	ator 3G002, 20 Cyl	
NA B	3-Way/50 C	BTO/OP 10	0(S023-3-3.23)	17
* 3HY5955D1, A1 (Dwg.: 40110BS			ator 3G002, 16 Cyl	., Right Bank
NA B	3-Way/SO C	BTO/OP 10	0(\$023-3-3.23)	17
* 3HY5955E2, A1 (Dwg.: 40110CS	r Start Sol 03/E-1) Valve	Diesel Gener	ator 3G003, 20 Cyl	., Right Bank
NA B	3-Way/SO C	BTO/OP 10	0(S023-3-3.23)	17
* 3HY5955F2, At (Dwg.: 40110DS	r Start Sol 03/E-2) Valve	Diesel Gener	ator 3G003, 16 Cyl	., Left Bank
			0(\$023-3-3.23)	17
* 3HY5955G2, A1 (Dwg.: 40110CS	r Start Sol 03/E-2) Valve	Diesel Gener	ator 3G003, 20 Cy1	., Left Dank
NA B	3-Way/SO C	BTO/OP 10	0(5023-3-3.23)	17
* 3HY5955H2, A1 (Dwg.: 40110DS	r Start Sol 03/E-1) Valve	Diesel Gener	ator 36003, 16 Cyl	., Right Bank
NA B	3-Way/SO C	BTO/OP 10	0(5023-3-3.23)	17

PAGE 113 OF 208

UNI 10/16/91

Inservice Testing Program for Valves San Onofre Nuclear Generating Station (Test Org's: MaMaintenance, 0 * Operations, T * Technical) Discussion of Cold Shutdown Intervals, See Next Att.

	Sec	Valve		Test		Test	Notes and Valve
Code	XI	 Actuator	Norm Pos.	and	100	Organization (Procedure)	Relief Requests

- ** System: Diesel Generator System
- (1 1/2-135-D-*), Diesel Air Receiver T-277 Air Inlet * \$32420MU135 Check Valve (Dwg.: 40110CS03/G-3) Valve Mfg.: Later C 1 1/2 CK/SA C CVTC/OP 0(\$023-3-3.30)
- (1 1/2-146-D-*), Diesel Air Receiver T-274 Air Inlet S32420MU146 Check Valve (Dwg.: 40110ASC3/H-1) Valve Mfg.: Later C 1 1/2 CY/SA C CV/C/OP 0(\$023-3-3.30)
- (1 1/2-160-D-*), Diesel Air Receiver T-275 Air Inlet * \$32420MU160 Check Valve (Dwg.: 40110AS03/G-3) Valve Mfg.: Later C 1 1/2 CK/SA C CVTC/OP 0(\$023-3-3.30)
- (1 1/2-168-D-*), Diesel Air Receiver T-276 Air Inlet * S32420MU168 Check Valve (Dwg.: 40110CS03/H-1) Valve Mfg.: Later C 1 1/2 CK/SA C CVIC/OP O(SO23-3-3.30)
- ** System: Fire Protection
- * 3HV5686, Containment Isol. Fire Protection (Outside Containment) (Dwg.: 40189BS03/D-3) Valve Mfg.: WKM A 4 GA/MO T(S023-V-3.13) 3&10

C AT/RR BTC/CS 33 2 A 4 GA/MO C 0(\$023-3-3.31) 3&10 C GA/MO PIT/RR O(S023-3-3.31) A 4 3&10

- * SA2301MU095, Containment Isol. Fire Protection (Inside Containment) (Dwg.: 40189BS02/D-4) Valve Mfg.: Anchor/Darling 2 AC 4 CK/SA C AT/RR T(S023-V-3,13)
- ** System: Fuel Stor. Pool & Refueling
- * 3LV0227C, RWST to Charging Pump Suction (Dwg.: 40124BS03/A-7) Valve Mfg.: Target Rock B 4 GA/MO C BTO/CS 11 O(SO23-3-3.31) 5&6 B 4 GA/MO C PIT/RR O(SO23-3-3.31) 5&6

ENGINEERING PROCEDURE S023-V-3.5 PAGE 114 OF 208 REVISION 7 ATTACHMENT 4 TCN 7-16

UNIT 3 10/16/91

Inservice Testing Program for Valves San Onofre Nuclear Generating Station (Test Org's: MaMaintenance, O = Operations, T = Technical) Discussion of Cold Shutdown Intervals, See Next Att.

Notes and Test Valve Valve Test Type and Sec Code XI Size Actuator Norm and Str. Organization Class Cat (in.) Type Pos. Mode Time (Procedure) Relief Requests * \$31219MU052 (6-052-C-675), RWST T006 to Charging Pump Suction Header (Dwg.: 40124BS03/B-7) Valve Mfg.: Aloyco/Walworth 0(5023-3-3.31.2) 5 CK/SA C CVTC/CS C 6 * S31219MU100 (10-100-C-z12), Refueling Pool Outlet Inside Containment (Dwg.: 40122ASC3/G-4) Valve Mfg.: Walworth GA/M C AT/RR T(S023-V-3.13) 10 A 10 (10-101-C-212), Refueling Pool Outlet Outside * \$31219MU101 Containment to Pump 2P014 (Dwg.: 40122ASO3/G-4) Valve Mfg.: Walworth A 10 GA/M C AT/RR T(S023-V-3.13) 10 ** System: Gas Radwaste * 3HV7258. Containment Isolation - Waste Gas from Contmt to Surge Tank (Dwg.: 4.)31ASO3/F-3) Valve Mfg.: WKM GA/MO O AT/RR T(S023-V-3.13) 3,6810 A s A 3 GA/MO O BTC/OP 31 0(\$023-3-3.30) 3,6&10 2 2 3 0 PIT/RR 0(\$023-3-3.30) A GA/MO 3,6810 * 3HV7259, (catainment Isolation - Safety Injection Tank Vent Header (Dwg.: 40131ASO3/F-2) Valve Mfg.: Fisher GA/AO O AT/RR
GA/AO O BTC/OP
GA/AO O FSTC/O T(S023-V-3.13) A 3 3 A BTC/OP 5 0(\$023-3-3.30) 3&10 3 FSTC/OP 0(5033-3-3.30) A 3&10 A 3 GA/AO O PIT/RR 0(5023-3-3.30) 3810 ** System: Liquid Radwaste

* 3PV7512, RCDT Pump Discharge From Containment to Rsd Waste (Dwg.: 40131AS03/8-3) Valve Mfg.: WKM

2	A	3	GL/MO	C	AT/RR	T(S023-V-3.13)	3,6810
2	A	3	GL/MO	C	BTC/OP 17	0(5023-3-3.30)	3,6810
2	A	3	GL/MO	C	PIT/RR	0(5023-3-3.30)	3,6810

10/16/91

Soc Code XI Size Class Cat (in.)	Valve and Actuator Norm Type Pos.	Test Typo and Str. Mode Time	Test Organization (Procedure)	Notes and Valve Relief Requests
* 3HV7513, Cont (Dwg.: 40131AS 2 A 3 2 A 3 2 A 3 2 A 3	11 /D 21 Value	Mfn · Fienor	T(S023-V-3.13) O(S023-3-3.30) O(S023-3-3.30) O(S023-3-3.30)	3&10 3&10 3&10 3&10
(Dwn : 40111CS	to Quench T	ank Mfo.: Kerote	Valve - Coolant P st T(SO23-V-3.13)	
(Dwg : 40111CS	O3/G-5) Valve CK/SA C	Mfa.: Kerote	Clnt Pol Demin to st T(SO23-V-3.13)	
* 3HV5434, Nitr	ogen to Safety	Men . Fisher	T(S023-V-3.13) 0(S023-3-3.30) 0(S023-3-3.30) 0(S023-3-3.30)	3&10 3&10 3&10 3&10
* 3HV54.7, Nitr (Dwg.: 40192CS 2 A 3/4 2 A 3/4 2 A 3/4 2 A 3/4	03/F-51 Valve	Mfa : Fisher	T(S023-V-3.13) O(S023-3-3.30) O(S023-3-3.30) O(S023-3-3.30)	3&10 3&10 3&10 3&10
(Dwg.: 40192CS	03/E-5) Valve	Mfg.: Kerote	upply to Containmer est T(SO23-V-3.13)	
(Dwg.: 40192CS	Check Valve	Mfg.: Kerote	Supply to Safety 1 est T(SO23-V-3.13)	

ENGINEERING PROCEDURE S023-V-3.5
REVISION 7 PAGE 116 OF 208
ATTACHMENT 4
TCN 7 16

UNIT 3 10/16/91

Code Class	Sec XI Size Cat (in.	and	Test Type orm and os. Mode	Str. Time	Test Organization (Procedure)	Notes and Valve Relief Requests
** Sys	tem: Nucl	ear Sampling				
(Dwa	.: 401724	t-LOCA Hydro ASO3/C-3) Val GA/SO C	ve Mfg.:	Target	Rock T(S023-V-3.13)	10
(Dwg	0501, Pos .: 40172/ A 1	st-Loca Hydro ASO3/D-2) Val GA/SO	ogen Monito lve Mfg.: AT/RR	Target	Rock T(S023-V-3.13)	10
(Dwc	40172	st-Loca Hydro ASO3/B-3) Va GA/SO	Ive Mfg.:	Target	Rock T(S023-V-3.13)	10
(Dwg	/0503, Po g.: 40172 A 1	st-Loca Hydro ASO3/B-2) Va GA/SO	Ive Mfg.:	Target	Rock T(S023-V-3.13)	10
/ Dwi	40134	AS03/F-71 Va	Ive Mfg. !	WKM	T(SO23-V-3.13) O(SO23-3-3.30) O(SO23-3-3.30)	3,6&10 3,6&10 3,6&10
2 2 2	g.: 40134 A 3/4 A 3/4	GL/A0 GL/A0 GL/A0 GL/A0	C AT/RR C BTC/O C FSTC/	Fisher P 4 OP	T(S023-V-3.13) O(S023-3-3.30) O(S023-3-3.30) O(S023-3-3.30)	3&10 3&10 3&10 3&10
(Uw	9.: 4013	ressurizer Va CASO3/E-7) Va 4 GL/MO 4 GL/MO 4 GL/MO	alve Mfg.:	WKM	T(SO23-V-3.13) O(SO23-3-3.30) O(SO23-3-3.30)	3,6&10

ENGINEERING PROCEDURE S023-V-3.5
REVISION 7 PAGE 117 OF 208
ATTACHMENT 4
/CL = 16

UNIT 3 10/16/91

Sec Code XI Size Class Cat (in.)			Test Organization (Procedure)	Notes and Valve Relief Requests
* 3HV0511, Pres	surizer Vapor	Sample Contain	nment Isolation Va	lve
2 n 3/4	GL/AO C	Mfg.: Fisher AT/RR BTC/OP 5 FSTC/OP PIT/RR	T(S023-V-3.13) 0(S023-3-3.30) 0(S023-3-3.30) 0(S023-3-3.30)	3&10 3&10 3&10 3&10
* 3HV0512, Pres	surizer Surge	Line Sample Co	ontainment Isolati	on Valve
(Dwg.: 40134AS) 2 A 3/4 2 A 3/4 2 A 3/4	GL/MO C	Mfg.: WKM AT/RR BTC/OP 31 PIT/RR	T(S023-V-3.13) 0(S023-3-3.30) 0(S023-3-3.30)	3,6&10 3,6&10 3,6&10
* 3HV0513, Pres	surizer Surge	Line Sample C	ontainment Isolati	ion Valve
(Dwg.: 40134AS) 2 A 3/4 2 A 3/4 2 A 3/4 2 A 3/4	GL/AO C	Mfg.: Fisher AT/RR ETC/OP 5 FSTC/OP PIT/RR	T(S0-3-V-3.13) O(S023-3-3.30) O(S023-3-3.30) O(S023-3-3.30)	3&10 3&10 3&10 3&10
			Waste Gas System	
2 A 3/4	GL/MO 0	AT/RR	T(S023-V-3.13) O(S023-3-3.30) O(S023-2-3.30)	3,6&10 3,6&10 3,6&10
* 3HV0515, Isol	ation Valve Qu	ench Tank/RCD	T to Waste Gas San	mpling Syst
2 A 3/4	03/G-2) Valve GL/AO C GL/AO C GL/AO C GL/AO C	AT/RR	T(\$023-V-3.13) 0(\$023-3-3.30) 0(\$023-3-3.30) 0(\$023-3-3.30)	3&10 3&10 3&10 3&10
* 3HV0516, Iso1	ation Valve RC	DT to Waste G	as Sampling System	n
			T(S023-V-3.13) 0(S023-3-3.30) 0(S023-3-3.30)	3,6&10 3,6&10 3,6&10

UNIT 3 10/16/91

Sec Code XI Size Class Cat (in.)	and	Test Type and Str. Mode Time	Test Organization (Procedure)	Notes and Valve Relief Requests
* 3HV0517, RCS H	ot Leg #2 Sam	ple Isolation	Valve	
(Dwg.: 40134ASO 2 A 3/4 2 A 3/4 2 A 3/4	GL/MO C GL/MO C GL/MO C	Mfg.: WKM AT/RR BTC/OP 29 PIT/RR	T(S023-V-3.13) 0(S023-3-3.30, 0(S023-3-3.3)	3,6&10
* 3MV78GO, Conta	inment Airbor	ne Rad Monito	r Train "A" Isol	(Pen 30B)
(Dwg.: 40170AS0 2 A 3/4 2 A 3/4 2 A 3/4 2 A 3/4	GA/SO 0 GA/SO 0 GA/SO 0 GA/SO 0	AT/RR BTC/OP 1 FSTC/OP PIT/RR	T(S023-V-3.13) 0(S023-3-3.30) 0(S023-3-3.30) 0(S023-3-3.30)	3&10 3&10 3&10 3&10
* 3HV7801, Conta	inment Airbor	ne Rad Monito	r Train "A" Isol	
(Dwg.: 40170AS0	3/E.4) Valve	Mfg.: Target	Rock	
* 3HV7802, Conta (Dwg.: 40170AS0	3/D-4) Valve	Hfg.: Tirget	Rock T(\$023V.3 13)	(Pen 30A)
* 3HV7S03, Conta (Dwg.: 40170AS0	13/N-31 Valve	Mfg . Target	r Train "B" Isol	
2 A 3/4 2 A 3/4 2 A 3/4 2 A 3/4	GA/SO 0 GA/SO 0 GA/SO 0 GA/SO 0	AT/RR BTC/OP 1 FSTC/OP PIT/RR	T(S023-V-3.13) O(S023-3-3.30) O(S023-3-3.30) O(S023-3-3.30)	3&10 3&10 3&10 3&10
			Monitor Train "B	0
2 A 3/4 2 A 3/4	GA/SO 0 GA/SO 0 GA/SO 0 GA/SO 0	Mfg.: Target AT/RR BTC/OP 1 FSTC/OP PIT/RR	T(S023-V-3.13) 0(S023-3-3.30) 0(S023-3-3.30) 0(S023-3-3.30)	3&10 3&10 3&10 3&10

UNIT 3 10/16/91

Sec Code XI Size Class Cat (in.)	Valve and Actuator Norm Type Pos.	Test Type and Str. Mode Time	Test Organization (Procedure)	Notes and Valve Relief Requests
(Dwg.: 40170AS	603/C-4) Valve	Mfg . larget	Monitor Train "B" Rock T(\$023-V-3.13) O(\$023-3-3.30) O(\$023-3-3.30) U(\$023-3-3.30)	3810
(Dwg.: 40170A5	03/C-3) Valve	Mfg.: Target	r Train "B" (Pen Rock T(S023-V-3.13) O(S023-3-3.30) O(S023-?-3.30) O(S023-3-3.30)	
(Dwg.: 40170AS	03/C-3) Valve	Mfg.: Target	r Train "B" (Pen Rock T(\$023-V-3.13) O(\$023-3-3.30) O(\$023-3-3.30) O(\$023-3-3.30)	
(Dwg.: 40170AS	GA/SO 0	Mfg.: Target AT/RR	Monitor Emergency Rock T(\$023-V-3.13) O(\$023-3-3.30) O(\$023-3-3.30) O(\$023-3-3.30)	3&10
** System: Nucle	ear Service Wat	er		
	GA/AO O GA/AO O		T(S023-V-2.13) 0(S023-3-3.30) 0(S023-3-3.30) 0(S023-3-3.30)	3&10 3&10 3&10 3&10
* \$31415MU236	(3-236-C-67 Isolation (ervice Water Cont	ainment
(Lwg.: 40140BS 2 AC 3	03/G-5) Valve		/Walworth T(S023-V-3.13)	10

ENGINEERING PROCEDURE SO23-V-3.5 REVISION 7 ATTACHMENT 4 TCN 7-16

PAGE 120 OF 208

UNIT 3 10/16/91

Code Class	Sec XI Cat	Size (in.)	Valve and Actuator Type	Norm Pos.	Test Type and Mode	Str. Time	Test Organization (Procedure)	Notes and Valve Relief Requests
** Sys	tem:	React	or Coolan	t				
* 3HV (Dwg	0296 .: 4 B B B B	A, Reac D111CS	ctor Head 03/F-6) V GL/SO GL/SO GL/SO GL/SO	alve !	MFa T	arget 5 5	Rock O(S023-3-3.48) O(S023-3-3.48) O(S023-3-3.48) O(S023-3-3.48)	
		0111050	ctor Head 03/F-6) V GL/SO GL/SO GL/SO GL/SO	alve !	Mfg.: Ta BTC/CS BTO/CS FSTC/CS PIT/RR	arget 5 5	Rock 0(\$023-3-3.48) 0(\$023-3-3.48) 0(\$023-3-3.48) 0(\$023-3-3.48)	
(Dwg 2 2		0111050	ssurizer (03/E-6) Vi GL/SO GL/SO GL/SO GL/SO	alve !	MFa . Ti	ar et 5 5	Rock 0(\$023-3-3.48) 0(\$023-3-3.48) 0(\$023-3-3.48) 0(\$023-3-3.48)	
			ssurizer (03/E-6) Va GL/SO GL/SO GL/SO GL/SO	C C	Mfg.: Ta BTC/CS BTO/CS	5	Rock 0(\$023-3-3.48) 0(\$023-3-3.48) 0(\$023-3-3.48) 0(\$023-3-3.48)	
* 3HV (Dwg 2 2 2 2 2	0298 .: 4' B B B B	Vent 0111CS0 1 1 1	03/E-5) V	C C	Mfg.: Ta BTC, CS BTO/CS	5 5	d/Pressurizer Rock O(SO23-3-3.48) O(SO23-3-3.48) O(SU23-3-3.48) O(SO23-3-3.48)	

UNIT 3 10/16/91

Code Class	Sec XI Size Cat (in.)	Valve and Actuator Norm Type Pos		Test Organization (Procedure)	Notes and Valve Relief Requests
* 3HV (Dwg 2 2 2 2 2	0299, Quer 40111CS B 1 B 1 B 1 B 1	SO3/E-4) Valve GL/SO C	Mfg.: Target BTC/CS 5 BTO/CS 5 FSTC/CS	Head/Pressurizer Rock O(5023-3-3.48) O(5023-3-3.48) O(5023-3-3.48) O(5023-3-3.48)	Vent
* 3HV (Dwg	9201, Rege .: 40123AS B 2 B 2 B 2	GA/MO C	Mfg.: WKM	3 to Auxiliary Sp 0(\$023-3-3.31) 0(\$023-3-3.31) 0(\$023-3-3.31)	586 586 586
* 3HV (Dwg	.: 40123AS	SO3/E-6) Valve	Mfg.: WKM BTC/CS 23	3 to RCS Loop 2A O(S023-3-3.31) O(S023-3-3.31) O(S023-3-3.31)	6 6 6
		GA/MO O	Mfg.: WKM BTC/CS 20 BTD/CS 20	0(\$023-3-3.31) 0(\$023-3-3.31) 0(\$023-3-3.31)	5 6 6
	: 40123AS	503/F-6) Valve	Mfg.: Fisher BTC/CS 4 FSTC/CS	t Exchanger E063 O(S023-3-3.31) O(S023-3-3.31) O(S023-3-3.31)	5 5 5
* 3HV (Dwg 2 2 2	.: 40124A5	Bleed Off to \$03/G-2) Valve GL/MO O GL/MO O GL/MO O	Vilume Control Mfg.: W#M AT/RR BTC/CS 15 PIT/RR	Tank T(\$023-V-3.13) O(\$023-3-3.31) O(\$023-3-3.31)	3,5,6&10 3,5,6&10 3,5,6&10

ENGINEERING PROCEDURE SC23-V-3.5
REVISION 7 PAGE 122 OF 208
ATTACHMENT 4
TCN 2 ~ 16

UNIT 3 10/16/91

Code Class	Sec XI Size Cat (in.	Valve and Actuator Norm Type Pos.		Test Organization (Procedure)	Notes and Valve Relief Requests
* 3HV	9218, RCS	Bleed Off to V	/CT Isolation	Valve Inside Conta	inment
1 Physics	. ADIDAN	C/12/E-21 1/27 VA	Men : Fisher	T(S023-V-3.13) 0(S023-3-3.31) 0(S023-3-3.31) 0(S023-3-3.31)	3,5&10 3,5&20 3,5&10 3,5&10
(Dwg	.: 40111B	essurizer Safet SO3/G-7) Valve SV/SA C	Mfg.: Dresse	r M(S023-I-2.1)	2
		essurizer Safet SO3/G-5) Valve SV/SA C	Mfg.: Dresse	r M(SO23-I-2.1)	2
* 3TV (Dwg	.: 40123A	down Isolation SO3/F-6) Valve GL/AO O GL/AO O GL/AO O	Mfg.: ITT BTC/CS 4	0(S023-3-3.31) 0(S023-3-3.31) 0(S023-3-3.31)	5 5 5
(Dwg	.: 40123A	(2-019-A-554), SO3/C-7) Valve CK/SA C	Mfg.: Kerote	ay Check Valve st O(SO23-3-3.31.2)	5
(Dwg	.: 40123A	S03/E-7) Valve	Mfg.: Kerote	Check Valve to RC st O(SO23-3-3.31.2)	S Loop 2A
(Dwg	.: 40123A	S03/D-7) Valve	Mfg.: Kerote	Check Valve to RUst O(SO23-3-3.31.2)	S Loop 1A
* \$31 (Dwg	AC 2	SO3/B-3) Valve CK/SA C	Mfg.: Kerote	ay to RCS From Chast T(S023-V-3.13) O(S023-3-3.31.2)	10

ENGINEERING PROCEDURE SO23-V-3.5 REVISION 7 ATTACHMENT 4 TCN 7-16

PAGE 123 OF 208

UNIT 10/16/91

Inservice Testing Program for Valves San Onofre Nuclear Generating Station (Test Org's: M*Maintenance, O * Operations, T * Technical) Discussion of Cold Shutdown Intervals, Spr Next Att.

Notes and Valve Test Valve and Type Test Code XI Size Actuator Actuator Actuator Str. Organization Class Cat (in.) Type Pos. Mode Time (Procedure) Relief Requests * 531201MU200 (14-200-C-645), Pump 3P016 Suction Check Valve (Dwg.: 401128S03/F-6) Valve Mfg.: Anchor/Darling C 14 CK/SA C CVTC/CS O(SU23-3-3.31.2) C 14 CK/SA C CVTO/CS O(SU23-3-3.31.2) * \$31201MU202 (14-202-C-645), LPSI Pump Suction Check Valve (Dwg.: 40112BS03/G-5) Valve Mfg.: Anchor/Darling 14 CK/SA C CVTC/CS O(SO23-3-3.31.2) 14 CK/SA C CVTO/CS O(SO23-3-3.31.2) C ** System: Resp. & Service Air System * 3HV5388, Containment Isolation Valve for Instrument Air (Dwg.: 40191GS03/G-6) Valve Mfg.: Fisher A 1-1/2 GL/AO O AT/RR T(SO23-V-3.13) 3&10 A 1-1/2 GL/AO O BTC/CS 2 A 1-1/2 GL/AO O FSTC/CS A 1-1/2 GL/AO O PIT/RR 2 0(\$023-3-3.31) 3&10 2 0(\$023-3-3.31) 3&10 0(\$023-3-3.31) 3&10 * \$32417MU016 (1-1/2-016-C-6:7), Instrument Air Isolation Check Valve - Inside containment (Dwg.: 40191GS03/G-6) Value Mfg.: Kerotest AC 1-1/2 CK/SA C AT/RR T(S023-V-3.13) 10 * S32423MU017 (2-017-C-627), Service Air Containment Isolation Valve (Dwg.: 40191ES03/C-4) Valve Mfg.: Kerotest AC 2 CK/SA C AT/RR T(S023-V-3.13) 10 * S32423HU055 (2-055-C-387), Containment Isolation Valve - Service Air (Dwg.: 40191ES03/C-5) Valve Mfg.: Vogt GL/M C AT/RR A 2 T(S023-V-3.13) 10 ** System: Safety Injection * 3HVO396, Flow Control Valve - LPSI Pumps to Shutdown Cooling System (Dwg.: 40112BS03/C-3) Valve Mfg.: Borg Warner B 10 GL/MO C BTO/CS 80 O(SO23-3-3.31) B 10 GL/MO C PIT/RR O(SO23-3-3.31) 0(\$023-3-3.31)

UNIT 3 7/16/91

Sec Code XI Size Class Cat (in.)	Valve and Actuator Norm Type Pos.	Test Type and Str. Mode Time	Test Organization (Procedure)	Notes and Valve Relief Requests
/ Dun . A6111900	D2/E-21 Value	Mea Walwor	hanger E004 Inlet th O(S023-3-3.31) O(S023-3-3.31) O(S023-3-3.31)	
/Than . A0112DC	02/0.21 Value	MEG Walwer	hanger E003 Inlet th 0(S023-3-3.31) 0(S023-3-3.31) 0(S023-3-3.31)	
* 3HV8160, Flow (Dwg.: 40112BS 2 B 10 2 B 10	Control Valve 03/C-2) Valve GL/MO O GL/MO O	- SDCS Heat Mfg.: fisher BTC/CS 40 PIT/RR	O(SO23-3-3.31) O(SO23-3-3.31)	6
(Dwg .: 40112BS	D3/C-2) Valve	Mfg.: Walwor	Exchanger Bypass th O(SO23-3-3.31) O(SO23-3-3.31)	
* 3HV8162, Bloc (Dwg.: 40112BS 2 B 2 2 B 2	03/G-2) Valve	Mfg.: Westin		6
* 3HV8163, Bloc (Dwg: 40112BS 2 B 2 2 B 2	03/D-3) Valve	Mfg.: Westin		6
(Dwg.: 40112AS	03/B-6) Valve	Mfg.: Fisher	O(SO23-3-3.30) O(SO23-3-3.30)	Pump 3P013 3&6 3&6
(Dwg.: 40112AS	03/B-6) Valve	Mfg.: Fisher BTO/OP 39.5	O(S023-3-3.30) O(S023-3-3.30)	Pump 3P012 3&6 3&6

ENGINEERING PROCEDURE SO23-V-3.5 REVISION 7 ATTACHMENT 4

PAGF 125 OF 208

UNIT 3 10/16/91

Sec Code XI Size	Valve Test and Type Test Actuator Norm and Str. Organization Type Pos. Mode Time (Procedure)	Notes and Valve Relief Requests
(Dwg.: 40112AS)	ro? Valve - Containment Emergency Sump Outlet 03/B-3) Valve Mfg.: Fisher BTF/MO 0 BTO/OP 39.5 0(S023-3-3.30) BTF/MO 0 PIT/RR 0(S023-3-3.30)	6
(Dwg.: 40112AS	rol Valve - Containment Emergency Sump Outlet 03/8-3) Valve Mfg.: Fisher BTF/MO 0 BTO/OP 39.5 0(S023-3-3.30) BTF/MO 0 PIT/RR 0(S023-3-3.30)	6
(Dwn + 40114DS	ation Valve - SI Recirc Return to RWST T005 03/8-3) Valve Mfg.: WKM GA/MO 0 BTC/OP 30 0(S023-3-3.30) GA/MO 0 PIT/RR 0(S023-3-3.30)	3&6 3&6
(Dwg.: 40114DS	ation Valve - SI Recirc Return to RWST T005 03/B-4) Valve Mfg.: WKM GA/MO 0 BTC/OP 30 0(S023-3-3.30) GA/MO 0 PIT/RR 0(S023-3-3.30)	3&6 3&6
(Dwg.: 40112DS 2 B 8	rol Valve - LPSI Header to RCS Loop 1A 03/G-4) Valve Mfg.: Target Rock GL/MO C BTO/OP 16 0(S023-3-3.30) GL/MO C PIT/RR 0(S023-3-3.30)	3&6 3&6
(Dwg.: 40112CS 2 B 2	rol Valve - HPSI Header #2 to RCS Loop 1A 03/D-4) Valve Mfg.: Target Rock GL/MO C BTO/OP 15 O(S023-3-3.30) GL/MO C PIT/RR O(S023-3-3.30)	3&6 3&6
(Dwg.: 40112CS	rol Valve - HPSI Header #1 to RCS Loop 1A 603/D-5) Valve Mfg.: Target Rock GL/MO C BTO/OP 15 O(S023-3-3.30) GL/MO C PIT/RR ^(S023-3-3.30)	3&6 3&6
	rol Valve - LPSI Header to RCS Loop 18 CC3/F-4) Valve Mfg.: Target Rock GL/MO C BTO/OP 16 O(S023-3-3.30) GL/MO C PIT/RR O(S023-3-3.30)	3&6 3&6

ENGINEERING PROCEDURE S023-V-3.5
REVISION 7 PAGE 126 OF 208
ATTACHMENT 4
TCN 7-10

UNIT 3 10/16/91

Code XI Size	Valve and Actuator Norm Type Pos.	Type and Str.	Test Organization (Procedure)	Notes and Valve Relief Requests
* 3HV9326, Cont (Dwg.: 40112CS 2 B 2 2 B 2	GL/MO C	Mfg.: Target BTO/OP 15	to RCS Loop 1B Rock O(\$023-3-3.30) O(\$023-3-3.30)	3&6 3&6
* 3HV9327, Cont (Dwg.: 40112CS) 2 B 2 2 B 2	03/B-5) Valve I GL/MO C	Mfg.: Target BTO/OP 15	to 2CS Loop 1B Rock O(\$023-3-3.30) O(\$023-3-3.30)	3&6 3&6
* 3HV9328, Cont (Dwg.: 40112DS 2 B 8 2 B 8	03/F-4) Valve	Mfg.: Target		3&6 3&6
* 3HV9329, Cont (Dwg.: 40112CS 2 B 2 2 B 2	03/B-4) Valve	Mfg.: Target		3&6 3&6
* 3HV9330, Cont (Dwg.: 00112CS) 2 B 2 2 E 2	03/A-5) Valve	Mfg.: Target	to RCS Loop 2A Rock O(\$023-3-3.30) O(\$023-3-3.30)	3&6 3&6
* 3HV9331, Cont (Dwg.: 40172DSC 2 B 8 2 B 8	03/H-4) Valve I	Mfg.: Target	RCS Loop 2B Rock O(\$023-3-3.30) O(\$023-3-3.31)	3&6 3&6
* 3HV9332, Cont (Dwg.: 40112CS) 2 B 2 2 B 2	O3/F-4) Valve I GL/MO C	Mfg.: Target BTO/OP 15		3&6 3&6
* 3HV9333, Cont (Dwg.: 40112CS) 2 B 2 2 B 2	GL/MC C	Mfg. Target	to RCS Loop 2B Rock O(S023-3-3.30) O(S023-3-3.30)	3&6 3&6

ATTACHMENT 4 TCN 7-16

UNIT 3 10/16/91

Sec Code XI Size Class Cat (in.)	Valve and Actuator Norm Type Pos.	Test Type and Str. Mode Time	Test Organization (Procedure)	Notes and Valve Relief Requests
(Dwg .: 40114DS	03/F-7) Valve M	Ifa : WKM	Tank Drain HDR to T(S023-V-3.13) O(S023-3-3.30) O(S023-3-3.30)	
* 3HV9336, Isol (Dwg.: 40112DS 2 B 16 2 B 16 2 B 16	09 /F 73 U-1 N	En UVW	Pump Suction 0(S023-3-3.30) 0(S023-3-3.30) 0(S023-3-3.30)	6 6 6
* 3HV9337, Isol (Dwg.: 40112DS 1 A 16 1 A 16 1 A 16 1 A 16	MOJE AN MARINE W	LE . LIVE	Pump Suction O(\$023-2 3.31.1) O(\$023-3-3.31) O(\$023-3-3.31) O(\$023-3-3.31)	5&6 5&6 5&6 5&6
* 3HV9339, Isol (Dwg.: 40112DS	ation Valve - S 03/C-2) Valve M	hutdown Cool	O(\$023-3-3.31.1) O(\$023-3-3.31) O(\$023-3-3.31) O(\$023-3-3.31)	S Loop 2
* 3HV9340, Safe	ty Injection Ta	ink TOOS Outl	o(SO23-3-3.31) O(SO23-3-3.31)	pop 1A
* 3HV9345, Safe (Dwg.: 40113AS 2 B 1 2 B 1 2 B 1	ty Injection Ta 03/G-6) Valve M GL/SO C GL/SO C GL/SO C	nk TOO8 Vent ffg.: Target BTO/CS 2 FSTC/CS PIT/RR	Rock O(\$023-3-3.31) O(\$023-3-3.31) O(\$023-3-3.31)	5 5 5
	ation Valve, Sa 03/D-3) Valve M GA/MO O GA/MO C		on Recirculation (0(\$023-3-3.30) 0(\$023-3-3.30)	3&6 3&6

ENGINEERING PROCEDURE S023-V-3.5
REVISION 7 PAGE 128 OF 208
ATTACHMENT 4
TCN 7 16

UNIT 3 10/16/91

Sec Code XI Size Class Cat (in.)	Valve and Actuator Norm Type Pos.	Test Type and Str. Mode Time	Test Organization (Procedure)	Notes and Valve Relief Requests
(Dwg : Anilanc	na/n_A) Value	Mfg.: WKM	on Recirculation 0(S023-3-3.30) 0(S023-3-3.30)	
* 3H+9350, Safe (Dwg.: 40113AS 1 B 12 1 B 12	03/0-21 Valve	Mfo.: WKM	0(S023-3-3.31) 0(S023-3-3.31)	
(Dwg - 4011345	GL/SO C	Mfg.: Target BTO/CS 2	Valve Rock 0(5023-3-3.31) 0(5023-3-3.31) 0(5023-3-3.31)	5 5 5
* 3HV9360, Safe (Dwg.: 40113BS 1 B 12 1 B 12	03/D-6) Valve	Mfa.: WKM	o(\$023-3-3.31) 0(\$023-3-3.31)	Loop 2A 5&6 5&6
* 3HV9365, Safe (Dwg.: 40113BS 2 B 1 2 B 1 2 B 1	03/G-6) Valve	Mfg.: Target	Valve Rock O(S023-3-3.31) O(S023-3-3.31) O(S023-3-3.31)	5 5 5
1 8 12	03/D-2) Valve	Mfg.: WKM BTO/CS 35	0(\$023-3-3.31)	Loop 2B 5&6 5&6
(Dwg.: 40113BS	ty Injection 7 03/G-2) Valve GL/SO C GL/SO C GL/SO C	Mfg.: Target BTO/CS 2		5 5 5

UNIT 3 10/16, 91

Code Class	Sec XI Cat	Size	Valve and Actuator Type	Norm	Test Type and Mode	Str. Time	Test Organization (Procedure)	Notes and Valve Relief Requests
* 3HV	9377	Isola	ation Valv	e -	SDCS Bypa	ass to	D LPSI Suction	
1	A	10	GA/MO	OC	AT/RR		0(5023-3-3.31.1)	5&6 5&6
1	A	10	GA/MO	00	BTO/CS	240	0(S023-3-3.31) 0(S023-3-3.31) 0(S023-3-3.31)	5&6
1								5&6
* 3HV (Dwg	9378	, Isol.	ation Value (03/B-3) V	ve -	SDCS Byp Mfg.: W	ass to	o LPSI Suction	
1	À	10	GA/MO	OC	AT/RR		0(\$023-3-3.31.1)	5&6 5&6
i	A	10	GA/MO	OC	BTO/CS	240	0(S023-3-3.31) 0(S023-3-3.31) 0(S023-3-3.31)	5&6
1	A	10	GA/MO	OC	PIT/RR		0(\$023-3-3.31)	5&6
			ation Val 03/B-7) V				o LPSI Suction - :	Seal
2	В	12	GA/MO	OC	BTC/OP	14	0(\$023-3-3.30)	6
2	8	12	GA/MO GA/MO	OC	PIT/RR	14	0(S023-3-3.30) 0(S023-3-3.30) 0(S023-3-3.31)	6
* 3HV	9420	, Cont	rol Valve	- HF	SI Heade	r #1	to RCS Loop 2 Hot	Leg
2 (Dwg).: 4	0112CS	03/G-3) V	alve	Mfg.: I	arget	Rock T(S023-V-3.13)	6&10
2 2	A	3	GL/MO	Č	BTO/CS	11	T(S023-V-3.13) O(S023-3-3.31) O(S023-3-3.31)	6&10
* 3H\	19434	, Cont	rol Valve 503/E-3) V	- H	PSI Heade	arget	to RCS Loop 1 Hot	Leg
2	A	3	GL/MO	C	AT/RR		T(S023-V-3.13)	6&10
2 2	A	3	GL/MO	C	PIT/RR	11	T(S023-V-3.13) O(S023-3-3.31) O(S023-3-3.31)	6&10
			S Relief					
			SO3/C-5) N	alve		Crosb,		15
- 6			WE SW		KTI/KK		H(30E3-1-E.34)	10

ENGINEERING PROCEDURE S023-V-3.5 REVISION 7 PAGE 130 OF 208 REVISION 7 ATTACHMENT 4 TCN 7-16

UNIT 3 10/16/91

Discussion of Cold Shutdown Interval	
Valve Test Test Valve Type Sec and Str. Organization Relief Code XI Size Actuator Norm and Time (Procedure) Requests	
+ \$21204MUDD1 (24-001-C-724), RW Tank STORE	
(Dwg.: 40112AS03/D-8) Valve Mfg.: TRW/M15S101 2 C 24 SDCK/SA C CVPO/OP 1(S023-V-3.5.4) 1&18 VRR-02 2 C 24 SDCK/SA C CVTC/RR M(S023-I-6.20) 1&18 VRR-02 2 C 24 SDCK/SA C CVTC/RR M(S023-I-6.20) 1&18 VRR-02	
* \$31204MU002 (24-002-C-724), KW 10110	
(Dwg.: 40112AS03/D-7) Valve Mfg.: TRW/M1SS101 2 C 24 SDCK/SA C CVPO/OP T(S023-V-3.5.4) 1&18 VRR-02 2 C 24 SDCK/SA C CVTC/RR M(S023-I-6.20) 1&18 VRR-02 2 C 24 SDCK/SA C CVTO/RR M(S023-I-6.20) 1&18 VRR-02	
* S31204MU003 (24-003-C-724), Outlet Check Valve - Containment	
* S31204MU003 (24-003-C-727) Emergency Sump	
Emergency Sump (Dwg.: 40112AS03/A-7) Valve Mfg.: TRW/Mission 2 C 24 SDCK/SA C CVPO/RR T(Later) 1,5&18 VRR-03 2 C 24 SDCK/SA C CVTO/RR M(S023-I-6.20) 1,5&18 VRR-03 2 C 24 SDCK/SA C CVTO/RR M(S023-I-6.20) 1,5&18 VRR-03	
2 C Z4 SDCK/Sh Cutles Check Valve - Containment	
* S31204MU004 (24-004-C-724), Outlet Check Valve - Containment Emergency Sump	
(Dwg.: 40112AS03/B-7) Valve Mfg.: T(Later) 1,5&18 VRR-03 2 C 24 SDCK/SA C CVPO/RR M(SO23-I-6.20) 1,5&18 VRR-03	
2 C 24 SUCK/SA C 10-006-C-675), HPSI Pumps 3P017 and 3P018 Suction Check	
* S31204MU006 (10-006-C-075), 7752	
(Dwg.: 40112AS03/G-7) Valve Mfg.: Aloyco C CVPO/OP T(S023-V-3.5.4) VRR-08 VRR-08	
* S31204MU008 (10-008-C-675), HPS1 PUMPS SP010	k
(Dwg.: 40112AS03/C-7) Valve Mfg.: Aloyco C 10 CK/SA C CVPO/OP T(S023-V-3.5.4) VRR-08 C 10 CK/SA C CVTO/RR O(S023-3-2.8) VRR-08	

ENGINEERING PROCEDURE SO23-V-3.5
REVISION 7 PAGE 131 OF 208
ATTACHMENT 4
TCN 7-18

UNIT 3 10/16/91

Inservice Testing Program for Valves
San Onofre Nuclear Generating Station
(Test Org's: M=Maintenance, O = Operations, T = Technical)
Discussion of Cold Shutdown Intervals, See Next Att.

Valve Test
Sec and Type Test
Code XI Size Actuator Norm and Str. Organization
Class Cat (in.) Type Pos. Mode Time (Procedure) Notes and Valve Relief Requests * \$31204MU012 (4-012-C-358), HPSI Pump 3P017 Discharge Check Valve (Dwg.: 40112ASO3/G-3) Valve Mfg.: Anchor/Darling 2 C 4 SCK/SA C CVTO/CS O(SO23-3-3,31.2) 5 * \$31204MU015 (4-015-C-358), HPSI Pump 3P019 Discharge Check Valve (Dwg.: 40112AS03/C-3) Valve Mfg.: Anchor/Darling 2 C 4 SCK/SA C CVTO/CS O(S023-3-3.31.2) 5 * S31204MU016 (4-016-C-358), HPSI Pump 3P018 Discharge Check Valve (Dwg.: 40112ASO3/E-3) Valve Mfg.: Anchor/Darling SCK/SA C CVTO/CS O(S023-3-3.31.2) 5 (4-017-C-553), HF , Pumps 3P018 & 3P019 to #2 High * S31204MU017 Pressure Header (Dwg.: 40112AS03/C-1) Valve Mfg.: Anchor/Darling CK/SA C CVTO/CS O(S023-3-3.31.2) 5 C 4 (3-018-A-551), HPSI Combined Header to RCS Loop 1A Check * S31204MU018 Valve (Dwg.: 40112CS03/D-3) Valve Mfg.: Anchor/Darling CK/SA C AT/RR 0(S023-3-3.31.1) 5 CK/SA C CVTO/CS 0(S023-3-3.31.2) 5 AC 3 (3-019-A-551), HPSI Combined Header to RCS Loop 1B Check S31204MU-19 Valve (Dwg.: 40112CS03/C-3) Valve Mfg.: Anchor/Darling AC 3 AC 3 (3-020-A-551), HPSI Combined "eader to RCS Loop 2A Check S31204MU020 Valve (Dwg.: 40112CS03/B-3) Valve Mfg.: Anchor/Darling CK/SA C AT/RR O(SO23-3-3.31.1) 5 CK/SA C CVTO/CS O(SO23-3-3.31.2) 5 AC 3 AC 3 (3-021-A-551), HPSI Combined Header to RCS Loop 2B Check * S31204MU021 Valve (Dwg.: 40112CS03/F-2) Valve Mfg.: Anchor/Darling AC 3 CK/SA C AT/RR O(SO23-3-3.31.1) 5 AC 3 CK/SA C CVTO/CS O(SO23-3-3.31.2) 5

UNIT 3 10/16/91

I service Testing Program for Valves San Onofre Nuclear Generating Station for's: MaMaintenance, 0 = Operations, T = Technical) Attacks of Cold Shutdown Intervals, See Next Att.

Kote and Trist Valve . YDP: Test Y Jater North Str. Organization Pos. Jue Time (Procedure) Relief Str. Organization Requests

(10-024-C-406), LPSI Pump 3PC15 Discharge Stop Check Valve 4. SO3/G-2 Varve Mfg. Anchor/Darling SCK/SA C CVID/CS 0(S023-3-3.31.2) 5

3% 204MU025 (10-025-C-406), LPSI Pump 3P016 Discharge Stop Check Valve (Day .: 40112ES03/E-3) Valve Mfg .: Anchor/Darling SCK/SA C CVTO/CS 0(SG23-3-3.31.2) 5 C 10

(12 -27-A-551), Safety Injection Headers to RCS Loop 1A S31204MU027 Check Valve

(Dwg.: 40113ASO3/U-5) Valve Mfg.: Archc., reling

CK/SA C AT/RR U.SO23-3-3.31.1) 5 CK/SA C CVTO/CS U(SO23-3-3.31.2) 5 AC

(12-029-, 55.), Safety Injection Headers to RCS Loop 1B S31204MU029 Check Valve

(Dwg.: 40113ASD3/C-4) Valve Mfg.: Anchor/Darling

CK/SA C AT/RR CK/SA C CVTO/CS 0(S023-3-3.31.1) 5 0(S023-3-3.31.2, 5 AC 12

S31204MU031 (12-031-A-551), Safety Injection Headers to RCS Loup 2A Check Valve

(Dwg.: 40113BS03/C-5) Valve Mfg.: Anchor/Darling AC 12 CK/SA C AT/RR 0(S023-3) AC 12 CK/SA C CVTO/CS 0(S023-3) 0(5023-3-3 31.1) 0(5023-3-3.31.2)

S31204MJ033 (12-033-A-551), Safety Injection Headers to RCS Loop 2B Check Valve

(Dwg.: 40113BSU3/C-4) Valve Mfg.: Anchor/Darling

CK/SA C AT/RR 0(S0/3-3-3.31.1) 5 CK/SA C CVTO/CS 0(SG23-3-3.31.2) 5 AC 12 AC 12

 S31204MU034 (2-034-C-329), HPSI 3P017 Miniflow (Dwg.: 40112ASU3/H-2) Valve Mfg.: Rockwell Edwards C 2 SCK/SA C CVTO/OP T(SO23-V-3.5.4)

\$31204MU035 (2-035-C-329), HPSI 3P019 Miniflow (Dwg.: 40112AS03/D-3) Valve Mfg.: Rockwell Edwards C 2 SCK/SA C CVTO/OP T(SO23-V-3.5.4) ENGINEERING PROCEDURE S023-V-3.5 PAGE 133 OF 208 REVISION 7 ATTACHMENT 4 TCN 7-16

UNIT 3 10/16/91

Inservice Testing Program for Valves
San Onofre Nuclear Generating Station
(Test Org's: M=Maintenance, O = Operations, T = Technical)
Discussion of Cold Shutdown Intervals, See Next Att.

Code	Sec XI Cat	Size (in.)	Valve and Actuator Type	Norm Pos.	Test Type and Mode	Str. Time	Test Organiza (Procedu	tion re)	Notes a Valve Relief Request	nd .s
* S31 (Dwg	204ML 0.: 40	J036 (2 0112AS0 2	2-036-C-3 03/F-3) V SCK/SA	(29), (a)ve C	HPSI 3PO Mfg.: Ri CVTO/OP	18 Tra	ain "A" M 11 Edward T(SO23-V	iniflow s ·3.5.4)		
(Dwc	1.: 40	0112850	3/G-2) N	alve	Mfg.: R	ockwel	15 Minifl 11 Edward T(SO23-V	ow Stop Ch s -3.5.4)	neck Val	ve
* S31	204MI	J040	(12-04 Valve	10-A-5	51), Saf	ety In	njection	Tank T008	Outlet	Check
(Dwg	AC AC AC	0113AS0 12 12 12	13/0-61 1	/alve C C	Mfg.: AT/RR CVPO/CS CVTO/RR	nchor,	Darling 0/S023-3 0/S023-3 M(S023-1	-3.31.1) -3.31.2) -6.160)	1,5&18 1,5&18 1,5&18	VRR-11 VRR-11 VRR-11
* \$31	204MI	J041	(12-04 Valve	11-A-5	51), Saf	ety l	njection	Tank T007	Outlet	Check
(Dwg	AC AC AC AC	0113AS0	13/D-21 V	C C C	Mfg.: A AT/RR CVPO/CS CVTO/RR	nchor,	Darling 0(S023-3 0(S023-3 M(S023-I	-3.31.1) -3.31.2) -6.160)	1,5&18 1,5&18 1,5&18	VRR-11 VRR-11 VRR-11
* \$31	204MI	J042	(12-04 Valve	12-A-5	51), Saf	ety I	njection	Tank 1009	Cutlet	Check
(Dwg	AC AC AC AC	0113BS/ 12 12 12 12	10 - 11	/alve C C	Mfg.: A AT/RR CVPO/CS CVTO/RR	nchor,	Darling 0(S023-3 0(S023-3 M(S023-1	-3.31.1) -3.31.2) -6.160)	1,5&18 1,5&18 1,5&18	VRR-11 VRR-11 VRR-11

ENGINEERING PROCEDURE SOI3-V-3.5 PAGE 134 OF 208 REVISION 7 ATTACHMENT 4 TCN 7-16

UNIT 3

Code Class	Sec XI Size Cat (in.)	Valve and Actuator Norm Type Pos.	Test Type and Str. Mode Time	Test Organization (Procedure)	Notes and Valve Relief Requests
				njection Tank TO10	
(Dwg 1 1 1	AC 12 AC 12 AC 12 AC 12	00 (0 0) 11-7	Mfg.: Anchor, AT/RR CVPO/CS CVTO/RR	/Darling O(S023-3-3.31.1) O(S023-3-3.31.2) M(S023-I-6.160)	1,5&18 VRR-11 1,5&18 VRR-11 1,5&18 VRR-11
* S31 (Dwg	204MU063 (2-063-C-329). 03/D-2) Value	LPSI Pump 3P0 Mfg.: Rockwe	16 Miniflow Stop C	
* \$31 (Dwg	.: 40112DS	03/a-2) Valve	M'a.: Anchor	oop 1A Check Val.3 /Darling . 0(S023-3-3.31.1) 0(S023-3-3.31.2)	5 5
(Dwg	.: 4011205	03/F-2) Valve	Mfg.: Anchor	oop 1B Check Valve /Darling O(\$023-3-3.31.1) O(\$023-3-3.31.2)	
(Dwg	.: 40112DS	03/F-2) Valve	Mfg.: Anchor	oop 2A Check Valve /Darling O(SO23-3-3.31.1) O(SO23-3-3.31.2)	
(Dwg	.: 40112DS	CK/SA C	Mfg.: Anchor AT/RR	oop 28 Check Valve /Darling O(SO23-3-3.31.1) O(SO23-3-3.31.2)	5
(Dwg	.: 40112BS	CK/SA C	Mfg.: Anchor	016 Suction Header /Darling T(S023-V-3.5.4) T(S023-SPT-8)	1 VRR-12

ENGINEERING PROCEDURE S023-V-3.5
REVISION 7 PAGE 135 OF 208
ATTACHMENT 4
TCN 7-16

UNIT 3 10/16/91

Inservice Testing Program for Valves
San Onofre Nuclear Generating Station
(Test Org's: M=Maintenance, O = Operations, T = Technical)
Discussion of Cold Shutdown Intervals, See Next Att.

Valve Test
Sec and Type Test
Code XI Size Actuator Norm and Str. Organization
Class Cat (in.) Type Pos. Mode Time (Procedure) Notes and Valve Relief Requests * S31204MU084 (16-084-C-645), LPSI Pump 3P015 Suction Check Valve (Dwg.: 40112ASO3/G-7) Valve Mfg.: Anchor/Darling 2 C 16 CK/SA C CVPO/OP T(SO23-V-3.5.4) 1 VRR-12 2 C 16 CK/SA C CVTO/RR T(SO23-SPT-8) 1 VRR-12 * \$31204MU087 (16-087-C-675), Containment Spray Pump 3P013 Suction Check Valve (Dwg.: 40114ASO3/F-6) Valve Mfg.: Anchor/Darling 2 C 16 CK/SA C CVTO/CS G(S023-3-3.31.2) 5 (16-088-C-675), Containment Spray Pump 3P012 Suction * S31204MU088 Check Valve (Dwg.: 40114ASO3/C-6) Valve Mfg.: Anchor/Darling 2 C 16 CK/SA C CVTO/CS O(SO23-3-3.31.2) 5 * S31204MU099 (2-099-C-334), SI Tank Drain Header to RFWT 3T005 Contmt Isolation Valve (Dwg.: 40114DSO3/F-6) Valve Mfg.: Kerotest 2 A 2 GL/M C AT/RR T(SO23-V-3.13) 10 * \$31204MU104 (2-104-C-329), HPSI 3P018 Train "B" Miniflow (Dwg.: 40112ASO3/E-2) Valve Mfg.: Rockwell Edwards 2 C 2 SCK/SA C CVTO/OP T(SO23-V-3.5.4) * S31204MU152 (3-152-A-551), To #2 HPSI Header (Dwg.: 40111AS03/F-5) Valve Mfg.: Anchor/Darling AC 3 CK/SA C AT/RR O(SO23-3-3.31.1) AC 3 CK/SA C CVTO/CS O(SO23-3-3.31.2) * \$31204MU155 (3-155-C-551), HPSI Header #1 to RCS Loop #2 Hot Leg (Dwg.: 40112CSO3/F-7) Valve Mfg.: Anchor/Darling 2 C 3 CK/SA C CVTO/CS O(SO23-3-3.31.2) 5 * \$31204MU156 (3-156-A-551), HPSI Header #1 to RCS Loop #2 Hot Leg Inlet Check Valve (Dwg.: 40112DS03/B-2) Valve Mfg.: Anchor/Darling 1 AC 3 CK/SA C AT/RR O(SO23-3-3.31.1) 5 1 AC 3 CK/SA C CVTO/CS O(SO23-3-3.31.2) 5

ENGINEERING PROCEDURE SO23-V-3.5 REVISION 7 ATTACHMENT 4 TCN 7-18

PAGE 136 OF 208

UNIT 3 10/16/91

Inservice Testing Program for Valves San Onofre Nuclear Generating Station
(Test Org's: M=Maintenance, O = Operations, T = Technical)
Discussion of Cold Shutdown Intervals, See Next Att.

Sec Code XI Size Class Cat (in.)	Valve Test and Type rest Actuator Norm and Str. Organization Type Pos. Mode Time (Procedure)	Notes and Valve Relief Requests
/ Dwg . A(111200	3-157-A-550), HPSI Header #2 to RCS Loop #1 03/E-2) Valve Mfg.: Anchor/Darling CK/SA C AT/RR T(S023-V-3.13) CK/SA C CVTO/CS O(S023-3-3.31.2)	
* S31204MU158 (3-158-A-550), HPSI Header #1 to RCS Loop #2	
1 AC 3	CK/SA C CVTO/CS O(S023-3-3.31.2)	5&10 5&10
/Dwn . AD11285	(16-159-C-645), LPSI Pump 3P016 Suction Heade (03/D-7) Valve Mfg.: Anchor/Darling CK/SA C CVPO/OP T(SO23-V-3.5.4) CK/SA C CVTO/RR T(SO23-SPT-8)	
* S31204MU201 ((16-201-C-645), LPSI Pump 3P015 Suction Heade	er Check Valve
2 C 16 2 C 16	CK/SA C CVPO/OP T(S023-V-3.5.4) CK/SA C CVTO/RR T(S023-SPT-8)	1 VRR-12 1 VRR-12
(Dwg.: 40126AS	Water Cooling S Pump 3P112 Discharge Valve SO3/G-3) Valve Mfg.: Fisher BTF/AO OC BTO/OP 18 O(SO23-3-3.30) BTF/AO OC FSTO/OP O(SO23-3-3.30) BTF/AO OC PIT/RR O(SO23-3-3.30)	
(Dwg.: 40126AS 3 B 30 3 B 30	Pump 3P113 Discharge Valve 503/E-3) Valve Mfg.: Fisher BTF/AO OC BTO/OP 18 O(SO23-3-3.30) BTF/AO OC FSTO/OP O(SO23-3-3.30) BTF/AO OC PIT/RR O(SO23-3-3.30)	
(Dwg.: 4012685 3 B 30	S Pump 3P307 Discharge Valve 503/G-3) Valve Mfg.: Fisher 3TF/AO OC BTO/OP 18 O(S023-3-3.30)	

FSTO/OP

PIT/RR

0(\$023-3-3.30)

0(\$023-3-3.30)

8 30

30

3

BTF/AO

BTF/AO OC

OC

ENGINEERING PROCEDURE S023-V-3.5
REVISION 7 PAGE 137 OF 208
ATYACHMENT 4
TCN 7-16

UNIT 3 10/16/91

Sec Code XI Size Class Cat (in.)	Valve and Actuator Norm Type Pos.	Test Type and Str. Mode Time	Test Organization (Procedure)	Notes and Valve Relief Requests
* 3HV6203, SWCS (Dwg.: 40126BS 3 B 30 3 B 30 3 B 30	03/E-3) Valve	Mfg.: Fisher		
* 3HV6494, SWCS	from CCW Heat	Exchanger EO	02B to Overflow at	
* 3HV6495, Salt (Dwg.: 40127CS	Water from CC 03/E-2) Valve	W Heat Exchan Mfg.: Fisher	ger E002B	
(Dwg.: 40127CS	03/C-3) Valve BTF/MO C	Mfg.: Fisher BTO/OP	0(S023-3-3.30) 0(S023-3-3.30)	6.7
* 3HV6497, Salt (Dwg.: 40127CS 3 B 30 3 B 30	03/B-2) Valve	Mfg.: Fisher		6
(Dwg.: 40126AS	03/G-4) Valve	Mfg.: TRW/Mi	112 Discharge Chec ssion T(S023-V-3.5.4) T(S023-V-3.5.4)	
(Dwg.: 40126AS	SDCK/SA OC	Mfg.: TRW/Mi	113 Discharge Chec ssion T(S023-V-3.5.4) T(S023-V-3.5.4)	k Valve
(Dwg.: 40126BS	03/G-4) Valve	Mfg.: TRW/Mi	7307 Discharge Chec ssion T(S023-V-3.5.4) T(S023-V-3.5.4)	k Valve

ENGINEERING PROCEDURE S023-V-3.5
REVISION 7 PAGE 138 OF 208
ATTACHMENT 4
TCN 7-16

UNIT 3 10/16/91

Inservice Testing Program for Valves
San Onofre Nuclear Generating Station
(Test Org's: M=Maintenance, O = Operations, T = Technical)
Discussion of Cold Shutdown Intervals, See Next Att.

Valve Test Notes and Sec and Type Test Valve Code XI Size Actuator Norm and Str. Organization Relief Class Cat (in.) Type Pos. Mode Time (Procedure) Requests

* S31413MU013 (1-013-D-691), SWCS Pump 3P112 Recirculation to Cyclone Separator (Dwg.: 40126AS03/F-4) Valve Mfg.: Controlmatics 3 C 1 CK/SA C CVTO/OP T(S023-V-3.5.4)

* S31413MU016 (1-016-D-601). SWCS Pump 3P113 Recirculation to Cyclone Separator (Dwg.: 40126AS03/D-4) Yalve Mfg.: Controlmatics

3 C 1 CK/SA C CVTO/OP T(SO23-V-3.5.4)

* S RMU021 (1-021-D-691), SWCS Pump 3P307 Recirculation to Cyclone Separator (Dwg.: +0126BSO3/F-4) Valve Mfg.: Controlmatics 3 C 1 CK/SA C CVTO/OP T(S023-V-3.5.4)

* S31413MU024 (1-024-)-691), SWCS Pump 3P114 Recirculation to Cyclone Separator (Dwg.: 40126BS03/D-4) Valve Mfg.: Controlmatics 3 C 1 CK/SA (CVTO/OP T(S02?-Y-3.5.4)

* S31413MU047 (1-047-D-691), Check Valve Sorvice Water Supply to Salt Water Pump 3P112 (Dwg.: 40126AS03/G-7) Valve Mfg.:
3 C CK/SA C CVTC/OP T(S023-SPT-7)

* S31413MU048 (1-048-D-691), Check Valve Service Water Supply to Salt Water Pump 3P113

(Dwg.: 40126ASO3/D-7) Valve Mfg.: 3 C CK/SA C CVTC/OP T(SO23-SPT-7)

* S31413MU049 (1-049-D-691), Check Valve Service Water Supply to Salt Water Pump 3P307 (Dwg.: 40126BS03/G-7) Valve Mfg.:
3 C CK/SA C CVTC/OP T(S023-SPT-7)

ENGINEERING PROCEDURE S023-V-3.5
REVISION 7 PAGE 139 OF 208
ATTACHMENT 4
TCN 7-16

UNIT 3 10/16/91

Cod	Se le XI iss Ca	sit (ize in.)	Valve and Actuator Type	Norm Pos.	Test Type and Mode	Str. Time	Test Organization (Procedure)	Notes and Valve Relief Requests
* \$	31413	MUO	50	(1-050 Water			k Val	ve Service Water	Supply to Salt
3 (D	wg.: C	401	26BS	03/D-7) V	alve !	Mfa.:		T(SO23-SPT-7)	
** 5	ysten	1: S	. am						
				E089 Blow 03/C-2) V					
2	B	6		GI /AO	0	RTC/OP	9	0(5023-3-3.30)	3
2	B	6		GL/AO	0	PIT/RR		O(SO23-3-3.30) O(SO23-3-3.30)	3
				E088 Blow					
2	B	6		03/F-2) V GL/A0	0	RTC/OP	Q	0(5023-3-3.30)	3
2 2	В	6		GL/AU GL/AU	0	PIT/RR		O(SO23-3-3.30) O(SO23-3-3.30)	3
				E089 Samp					
2	R	3	14	03/B-2) V GL/A0	0	RTC /OP	5	0/5023-3-3 301	3
2	8	3/	4	GL/AO GL/AO	0	FSTC/OP PIT/RR		0(S023-3-3.30) 0(S023-3-3.30)	3
* 3	HV405	8, 3	5/G 1	E088 Samp	le Isi	olation 1	Valve		
2	8	3,	4	03/F-2) V GL/A0	0	BTC/OP	5	O(SO23-3-3.30)	3
2 2	8	3/	4	GL/AO GL/AO	0	FSTC/OP PIT/RR		O(SO23-3-3.30) O(SO23-3-3.30)	3
* 3	HV820	10, 5	Steam	n from St	eam G	enerator	E089	to AFW Pump	
2 (D	wg.:	4014	11CS	03/E-3) V GL/A0	alve I	Mfg.: F BTO/OP	isher 4	0(8023-3.3.30)	
2 2	B	4		GL/AO	00	FSTO/OP PIT/RR		O(SO23-3-3.30) O(SO23-3-3.30)	

ENGINEERING PROCEDURE S023-V-3.5
REVISION 7 PAGE 140 OF 208
ATTACHMENT 4
TCN 7-13

UNIT 3 10/16/31

Code Class	Sec XI Cat	Size (in.)	Valve and Actuator Type	Norm Pos.	Test Type and Mode	Str. Time	Test Organization (Procedure)	Notes Valve Reliet Reques	and f sts
* 2HV	8201,	Steam	n from Ste	eam Ge	enerator	E088	to AFW Pump		
2 2 2 2	B B B	4 4	03/E-3) Va GL/AO GL/AO GL/AO	OC OC OC	RTO/OP FSTO/OP PIT/RR	4	O(S023-3-3.30) O(S023-3-3.30) O(S023-3-3.30)		
* 3HV	8204	Steam	n Generato	or EO	39 Main	Steam	Isolation Valve		
2 2 2 2 2	.: 40 B B B	40 40 40 40 40	03/B-2) V: GA/HY GA/HY GA/HY	0 0 0 0	BTC/CS BTPC/OP FSTC/CS PIT/RR	8	0(S03-3-3.17) 0(S03-3-3.17) 0(S03-3-3.17) 0(S03-3-3.17)	3&9 3&9 3&9 3&9	
							Isolation Valve		
2 Dwg	8	40	GA/HY	0	BTC/CS	8	0(\$03-3-3.17)	3&9	
2	8	40	GA/HY	0	BTPC/OP		0(\$03-3-3.17)	389	
2 2	B	40	GA/HY GA/HY	0	FSTC/CS PIT/RR		O(\$03-3-3.17) O(\$03-3-3.17) O(\$03-3-3.17) O(\$03-3-3.17)	3&9 3&9	
* 3HV	8419,	Main	Steam Dur	np to	Atmosphe	ere			
(Dwg	.: 4(0141050	13/E-6) V	alve I	Mfg.: Ci	ontr	CGwb [3811	VDD . 25
2	B	8	AV/AO	r	BTO/CS	60	0(5023-3-3.31)	3811	VRR-25
2	8	8	AV/AO	Č	BTP0/02		0(5023-3-3.31)	3&11	VRR-25
2	В	8	AV/AO	C	FSTC/CS		O(SG23-3-3.31)	3&11	YRR-25
2	В	8	AV/AO	C	PIT/RR		O(\$023-3-3.31) O(\$023-3-3.31) O(\$023-3-3.31) O(\$023-3-3.31) O(\$023-3-3.31)	3&11	VRR-25
			Steam Dur 03/F-6) V				Comp. 1		
2							0(\$023-3-3.31)	3811	VRR-25
2	В	8	AV/AO	Č	3TO/C7	60	0(5023-3-3.31)	3&11	VRR-25
2	В	8	AV/AD	C	BTPO/OP		0(\$023-3-3.31)		VRR-25
2 2	В	8	AV/AO	C	FSTC/CS		0(\$023-3-3.31)		VRR-25
2	В	8	AV/AO	C	PIT/RR		0(\$023-3-3.31)	3&11	VRR-25
* 3PS (Dwg			n Steam R 03/G-7) V			rnshv			
2		6		C	RVT/RR	· vsuj	M(S023-1-2.5)	2	

ENGINEERING PROCEDURE S023-V-3.5 REVISION 7 ATTACHMENT 4 TCN 7-16

PAGE 141 OF 208

UNIT 3 10/16/91

Sec Code XI Size Class Cat (in.)	Valve and Actuator Norm Type Pos.	Test Type and Str. Mode Time	Test Organization (Procedure)	Notes and Valve Relief Requests
* 3PSV8402, Main (Dwg.: 40141DS0 2 C 6	n Steam Relief 03/G-6) Valve I SV/SA C	Valve Mfg.: Crosby RVT/RR	M(S023-I-2.5)	2
* 3PSV8403, Main (Dwg.: 40141DS0 2 C 6	03/G-6) Valve I	Mfg.: Crosby	M(SO23-I-2.5)	2
* 3PSV8404, Mair (Dwg.: 40141DSC 2 C 6	03/G-5) Valve I	Mfg.: Crosby	M(S023-1-2.5)	2
* 3PSV8405, Maii (Dwg.: 40141DSC 2 C 6	n Steam Relief 03/G-5) Valve I SV/SA C	Valve Mfg.: Crosby RVT/RR	M(S023-1-2.5)	2
* 3PSV8406, Maii (Dwg.: 40141DSC 2 C 6	n Steam Relief 03/G-4) Valve i SV/SA C	Valve Mfg.: Crosby RVT/RR	M(S023-1-2.5)	2
* 3PSV8407, Mail (Dwg.: 40141DS) 2 C 6	n Steam Relief 03/F-5) Valve (SV/SA C	Valve Mfg.: Crosby RVT/RR	M(SO23-1-2.5)	2
* 3PSV8408, Main (Dwg.: 40141 Sc 2 C 6	03/F-5) Valve	Mfg.: Crosby	M(S023-I-: "	2
* 3PSV8409, Mai (Dwg.: 40141DS 2 C 6	03/F-5) Valve	Mfg.: Crosby	h(S023-1-2.5)	2
* 3PSV8410, Mai (Dwg.: 40141CS 2 C 6		Mfg.: Crosby	M(S023-I-2.5)	2
* 3PSV8411, Mai (Dwg.: 40141CS 2 C 6		Mfg.: Crosby	M(S023-I-2.5)	2

UNIT 3 10/16/91

Code Class	Sec XI Size Cat (in.)	Valve and Actuator Norm Type Pos.	Test Type and Str. Mode Time	Test Organization (Procedure)	Notes and Valve Relief Requests
* 3PS	/8412. Mai	n Steam Relief	Valve	M(S023-I-2.5)	
* 3PSI (Dwg	V8413, Mai : 40141CS C 6	n Steam Relief 03/G-5) Valve SV/SA C	Valve Mfg.: Crosby RVT/RR	M(S023-I-2.5)	2
* 3PS' (Dwg	V8414, Mai .: 40141CS C 6	n Steam Relief 03/G-5) Valve SV/SA C	Valve Mfg.: Crosby RVT/RR	M(S023-1-2.5)	2
* 3PS (Dwg 2	V8415, Mai : 40141CS C 5	n Steam Relief 03/G-4) Valve SV/SA C	Valve Mfg.: Crosby RVT/RR	M(SO23-1-2.5)	2
(Dwg	.: 40141CS	n Steam Relief 03/G-4) Valve SV/SA C	Mfg.: Crosby	M(SO23-I-2.5)	2
* SPS (Dwg 2	V8417, Mai .: 40141CS C 6	n Steam Relief 03/G-3) Valve SV/SA C	Valve Mfg.: Crosby RVT/RR	M(S023-I-2.5)	2
* 3PS (Dwg 2	V8418, Mai .: 40141CS C 6	n Steam Relief 03/G-3) Val e SV/SA L	Valve Mfg.: Crosby RVT/RR	M(S023-I-2.5)	2
* 531	301MU003	(4-003-D-62 AFP Turbine	O), Check Val	ve on Steam Supply	
(Dwg 3 3 3	C 4 C 4 C 4	CK/SA C	CVPO/OP CVTC/RR	/Darling T(SO23-V-3.5.4) M(SO23-I-6.160) O(Later)	1&18 VRR-18 1&18 VRR-18 1&18 VRR-18
		AFP Turbine	K007	ve on Steam Supply	from E089 to
(Dwg 3 3 3	: 40141CS C 4 C 4	O3/E-2) Valva CK/SA C CK/SA C CK/SA C	Mfg.: Anchor CVPO/OP CVTC/RR CVTO/CS	/Darling T(S023-V-3.5.4) M(S023-I-6.160) O(Later)	1&18 VRR-18 1&18 VRR-18 1&18 VRR-18
			ATTACUMENT 4		0405 51 05 51

ENGINEERING PROCEDURE S023-V-3.5
REVISION 7 PAGE 143 OF 208
ATTACHMENT 4
TCN 7-16

UNIT 3 10/16/91

Inservice Testing Program for Valves
San Omofre Nuclear Generating Station
(Test Org's: M=Maintenance, O = Operations, T = Technical)
Discussion of Cold Shutdown Intervals, See Next Att.

Notes and Valve Test Sec and Type Test
Code XI Size Actuator Norm and Str. Organization
Class Cat (in.) Type Pos. Mode Time (Procedure) Valve Relief Requests * \$31301MU027 (3/4-027-6-636), Instrument Air Supply Check Valve for 3HVE419 (Dwg.: 40141SO3D/D-6) Valve Mfg.: Anchor/Darling 0(5023-3-2.18.1) 12 2 AC 3/4 CK/SA C AT/RR 2 AC 3/4 CK/SA C CVTC/OP 0(\$023-3-3.30) 12 (3/4-034-P-536), Instrument Air Supply Check Valve for * \$31301MU034 3HV8421 (Dwg.: 40141503C/E-5) Valve Mfg.: Anchor/Darling AC 3/4 CK/SA C AT/RR O(SO27-3-2.18.1) 12 AC 3/4 CK/SA C CVTC/OP O(SO23-3-3.30) 12

** System: Sumps and Drains

* 34V5803, Containment Sump to Radwaste Sump (Dwg.: #0117AS03/E-2) Valve Mfg.: WKM

2	A A	3	GA/MO		AT/RR		T(S023-V-3.13)	3,5,6&10
2	A	3	GA/MO	0	BTC/OP	18	0(\$023-3-3.30)	3,5,6&10
2	A	3	GA/MO	0	PIT/RR		0(5023-3-3.30)	3,5,6&10

* 3HV5804, Containment Sump to Radwaste Sump Isolation Valve (Dwo: 40117AS03/F-1) Valve Mfg: Fisher

	(man H	407	11 MOOS/ F-11	ABIAN	111 19 1 1 2111		
-	2 A	3	GA/AO	0	AT/RR	T(S023-V-3.13)	3,5&10
-	2 A	3	GA/AO	0	BTC/OP 5	0(5023-3-3.30)	3,5&10
-	2 A	3	GA/AO	0	FSTC/OP	0(\$023-3-3.30)	3,5&10
-	2 A	3	GA/AO	0	PIT/RR	0(\$023-3-3.30)	3,5810

PAGE 144 OF 208

UNIT 3

JUSTIFICATION FOR VALVES NOT TESTED QUARTERLY

- ** System: Auxiliary Feedwater
- * \$31305MU121 (6-121-D-598), AFP 3F140 Supply to S/G E089 Exercising this valve while the plant is at power would result in placing unnecessary thermal stresses on the feedwater piping, which could result in premature failure of this piping.
- * S31305MU126 (6-126-D-598), AFP 3P141 Discharge Check Valve Same as S31305MU121.
- * S31305MU532 (6-532-D-598), AFP 3P504 Discharge Check Valve Same as S31305MU121.
- * S31305MU5-7 (6-547-D-598), AFP 3P140 Discharge Check Valve Same as S31305MU121.
- ** System: Boric Acid Makeup
- * 3HV9235, BAMU Tank T072 to Gravity Feed to Charging Pump Suction Opening this valve would result in injecting highly concentrated boric acid into the reactor conlant system, causing plant shutdown.
- * 3HV9240, BAMU Tank T071 to Charging Suction Header Control Valve Same as HV-9235.
- * 3HV9247, BAMU Pump to Charging Pump Suction Control Valve Same as HV-9235.
- * S31218MU033 . (3-033-D-675), Boric Acid Makeup Pump 3P175 Discharge Check Valve Full stroke exercising of this valve during plant power operation would result in over-boration of the reactor coolant system and plant shutdown.
- * S31218MU035 (3-035-D-675), Boric Acid Makeup Pump 3P174 Discharge Check Valve Same as \$31218MU033.
- ** System: Chemical and Volume Control
- * 3HV9200, Charging Pumps to Regenerative Heat Exchanger E063 Exercising while the plant is at power would isolate normal charging to the RCS. This would result in non-compliance with Technical Specification 3.1.2.2, which requires two flow paths for boration during power operation.
- * 3HV9205, Regenerative Heat Exchanger E063 to Letdown Heat Exchanger Exercising this valve during power operation would result in unnecessary thermal transients on the regenerative heat exchanger and reactor coolant system charging nozzles.

ATTACHMENT 5

PAGE 1 OF 12

- * 3LV0227B, VCT Outlet Valve Closing this valve requires shifting charging pump suction and injecting highly concentrated boric acid into the RCS, causing plant shutdown.
- * 3TV9267, Letdown Containment Isolation Valve Same as HV-9205.
- * S31208MU015 (4.015-C-675), VCT to Charging Pump Suction Check Valve Same as LV-0227B.
- * S31208MU082 (3-082-C-675), Grav Feed BAMU Tanks to Charging Pump 3P190 Suction
- * S31208MU083 (3-083-C-675), BAMU Pumps to Charging Pumps Suction Header Same as HV9235.
- * S31208MU130 (2-130-C-334), Contmt Isol. Chg Pump Disch to Aux.

 Spray Regen HX Bypass

 Exercising this valve while the plant is at power would result in unnecessary thermal transients on the pressurizer spray nozzle.
- ** System: Component Cooling Water
- * 3HV6211, CCW Non-Critical Loop to Containment Isolation Valve Exercising this valve during operation would secure or direct cooling water flow from RCP seals, which could result in seal damage and plant shutdown.
- * 3HV6212, CCW From Heat Exchanger E001A to Non-Critical Loop Same as HV-6211.
- * 3HV6213, Component Cooling Water Discharge to Non-Critical Loop Same as HV-6211.
- * 3HV6216, Isolation Valve CCW Non-Critical Loop from Containment Same as HV-6211.
- * 3HV6218, CCW Pump Suction from Non-Critical Loop Same as HV-6211.
- * 3HV6219, CCW Pump Suction from Non-Critical Loop Same as HV-6211.
- * 3HV6223, Isolation Valve CCW Non-Critical Loop Containment Inlet Same as HV-6211.
- * 3HV6236, Containment Isolation CCW Non-Critical Loop Return Same as HV-6211.

- * 3HV6500, Component Cooling Water from SDCS Heat Exchanger E003 Same as HV-6211.
- * 3HV6501, Component Cooling Water from SDCS Heat Exchanger E004 Same as HV 6211.
- * S31203MU101 (28-101-D-725), CCW Pump 3P024 Discharge Check Valve Full stroke exercising of this valve during power operation would require div ting CCW from the Reactor Coolant Plant seals, which would result in seal damage and plant shutdown.
- * \$31203MU102 (28-102-D-725), CCW Pump 3PG25 Discharge Check Valve Same as \$31203MU101.
- * S31203MU103 (28-103-D-725), CCW Pump 3P025 Discharge Check Valve Same as S31203MU101.
- * S31203MU264 (1-264-D-627), Nitrogen Supply to Component Cooling Water Surge Tank T003A
 Stroke Test requires placing the affected CCW loop out of service.
- * S31203MU265 (1-265-D-627), Nitrogen Supply to Component Cooling Water Surge Tank T003A Same as S31203MU264.
- * S31203MU266 (1-266-D-627), Nitrogen Supply to Component Cooling Water Surge Tank T004B Same as S31203MU264.
- * S31203MU267 (1-267-D-627), Nitrogen Supply to Component Cooling Water Surge Tank T004B Same as S31203MU264
- * S31203MU268 (1-268-D-627), Nuclear Plant Service Water Supply to CCW Loop A
 Same as S31203MU264.
- * S31203MU269 (1-269-D-£27), Nuclear Plant Service Water Supply to CCW Loop B
 Same as S31203MU264.
- ** System: Condensace and Feedwater
- * 3HV1105, S/G E089 Feedwater Bypass Valve Exercising this valve during plant operation would disturb steam generator level control and could result in plant shutdown.
- * 3HV1106, S/G E088 Feedwater Bypass Valve Same as HV 1105.

ENGINEERING PROCEDURE \$023-V-3.5 REVISION 7 ATTACHMENT 5 TCN 7-16

PAGE 147 OF 208

UNIT 3

- * 3HV4047, Feedwater Block Valve Steam Generator EO88 Full stroke exercising this valve during power operation would result in loss of feedwater flow to the steam generator, which could result in a plant shutdown.
- * 3HV4048, Feedwater Isolation Valve Steam Generator E088 Same as HV-4047.
- * 3HV4051, Feedwater Block Valve Steam Generator E089 Same as HV-4047.
- * 3HV4052, Feedwater Isolation Valve Steam Generator E089 Same as HV-4047.
- (20-036-C-609), Main Feed Check Valve at Steam Generator * \$31305MU036 F089 This valve cannot be stroked during any mode in which main feed must remain uninterrupted. It therefore can only be stroked open when main feed is initiated following a plant shutdown.
- * 531305MU124 (6-124-C-599), AFW Check Valve at Steam Generator E089 Exercising this valve while the plant is at power would result in placing unnecessary thermal stresses on the feedwater piping, which could result in premature failure of this piping.
- * \$31305MU129 (20-129-C-609), Main Feed Check Valve at Steam Generator E088 This valve cannot be stroked during any mode in which main feed must remain uninterrupied. It therefor can only be stroked open when main feed is initiated following a plan .. shutdown.
- * 531305MU448 (6-448-C-599), AFW Check Valve at Steam Generator E088 Same as S31305MU124.
- ** System: Containment HVAC (Normal)
- * 3HV9S48, Containment Purge Supply See Valve Relief Request No. 19. This valve is passive except in Modes 5 and 6, at which time it is tested. In addition, exercising this valve during plant power operation would result in non-compliance with the Technical Specifications.
- * 3HV9949, Containment Purge Supply Same as HV-9948.
- * 3HV9950, Containment Furge Exhaust Same as NV-9948.
- * 3HV9951, Containment Purge Exhaust Same as HV-9948.

ENGINEERING PROCEDURE S023-V-3.5
REVISION 7 PAGE 148 OF 200
ATTACHMENT 5
TCN 7-16

UNIT 3

20

- ** System: Containment Spray
- * 3HV8150, Isolation Valve SDCS Heat Exchanger E004 to LPSI Header Applying power or opening this valve while the plant is at power would result in non-compliance with the Technical Specification. Opening this valve could defeat both to link of LPS.
- * 3HV8151, Isolation Valve SDCS Heat Exchanger E003 to LPSI Header Same as P'-8150.
- * 531206MU004 (8-004-C-406), Spray Header #1 Containment Isolation Stop Check Valve Exercising this valve with flow either during operation or cold shutdown would result in a spraydown of the containment building.
- * S31206MU012 (8-012-C-406), Spray Pump 3P012 Discharge Stop Check Valve Full stroke exercising of this valve while the plant is at power would require disabling both trains of LPSI.
- * S31206MU014 (8-014-C-406), Spray Pump 3P013 Discharge Stop Check Valve Same as S31206MUC12.
- * \$31206MU029 (8-029-C-645), Spray Pump 3P012 Discharge to SDCS HV E004 Check Valve Same as \$31206MU012.
- * \$31206MU030 (8-030-C-645), Spray Pump 3P012 Discharge to SDCS HV E003 Check Valve Same as \$21206MU012.
- ** System: Fire Protection
- * 3HV5686, Containment Isol. Fire Protection (Outside Containment) Exercising this valve during plant operation will activate the Fire Protection system in the Unit 3 Containment building.
- ** System: Fuel Stor. Pool & Refueling
- * 3LV0227C, RWST to Charging Pump Suction
 Opening this valve would result in injecting highly concentrated boric acid into the reactor coolant system, causing plant shutdown.
- * S31219MU052 (6-052-C-675), RWST T006 to Charging Pump Suction Header Same as LV-0227C.

- ** System: Reactor Coolant
- * 3HV0296A, Reactor Head Vent
 This valve is part of the Reactor Coolant system Boundary isolation.
 Opening this valve while the Reactor Coolant System is pressurized would release Reactor Coolant to the vent system. Further, power is normally removed from the solenoid.
- * 3HV0296B, Reactor Head Vent
 This valve is part of the Reactor Coolant system Boundary isolation.
 Opening this valve while the Reactor Coolant System is pressurized would release Reactor Coolant to the vent system. Further, power is normally removed from the solenoid.
- * 3HV0297A, Pressurizer Vent Valve
 This valve is part of the Reactor Coolant system Boundary isolation.
 Opening this valve while the Reactor Coolant System is pressurized would release Reactor Coolant to the vent system. Further, power is normally removed from the solenoid.
- * 3HV0297B, Pressurizer Vent Valve
 This valve is part of the Reactor Coolant system Boundary isolation.
 Opening this valve while the Reactor Coolant System is pressurized
 would release Reactor Coolant to the valve system. Further, power is
 normally removed from the solenoid.
- * 3HV0298, Vent to Contmt from Reactor Head/Pressurizer
 This valve is not considered accessible during power operation.
 Further, power is normally removed from the solenoid.
- * 3HV0299, Quench Tank Inlet from Reactor Head/Pressurizer Vent This valve is normally inaccessible during power operation. Further, power is normally removed from the solenoid.
- * 3HV9201, Regenerative Heat Exchanger E063 to Auxiliary Spray Exercising this valve while the plant is at power would result in unnecessary thermal transients and stress on the pressurizer spray nozzle.
- * TWY9202, Regenerative Heat Exchanger E063 to RCS Loop 2A
 This alve must remain open during power operation in order to ensure consistency with assumptions made regarding system flow to the RCS cold legs in the accident analysis and to comply with the intent of LCO 3.5.2
- * 3HV9203, Regenerative Heat Exchanger E063 to RCS Loop 1A Same as HV-9202.

- * 3HV9204, RCS Loop 2B to Regenerative Heat Exchanger E063
 Exercising this valve during power operation would result in unnecessary thermal stress transients on the regenerative heat exchanger and reactor coolant system charging nozzles.
- * 3HV9217, PCS Bleed Off to Volume Control Tank
 Exercising this valve could result in Reactor Coolant Pump seal failure
 and subsequent reactor shutdown.
- * 3HV9218, RCS Bleed Off to VCT Isolation Valve Inside Containment Same as HV-9217.
- * 3TV0221, Letdown Isolation Valve Exercising this valve during power operation would result unnecessary thermal transients on the regenerative heat exchanger and reactor coolant system charging nozzles.
- * S31201MU019 (2-019-A-554), Auxiliary Spray Check Valve Exercising this valve while the plant is at power would result in unnecessary thermal transients on the pressurizer spray nozzle.
- * S31201MU020 (2-020-A-554), Charging Line Check Valve to RCS Loop 2A This valve cannot be tested without closing HV-9203 (discussed elsewhere in this table).
- * S31201MU021 (2-021-A-554), Charging Line Check Valve to RCS Loop 1A This valve cannot be tested without closing HV-9202 (discussed elsewhere in this table).
- * S31201MU129 (2-129-A-554), Auxiliary Spray to RCS From Charging Pumps Same as S31201MU019.
- * S31201MU200 (14-200-C-645), Pump 3P016 Suction Check Valve This valve can only be exercised when plant is on shutdown cooling.
- * S31201MJ202 (14-202-C-645), LPSI Pump Suction Check Valve Same as S31201MJ200.
- ** System: Resp. & Service Air System
- * 3HV5388, Containment Isolation Valve for Instrument Air Exercising this valve during plant power operation isolates instrument air to the Containment building and could result in a plant shutdown.
- ** System: Safety Injection
- * 3HV0396, Flow Control Valve PLT Pumps to Shutdown Cooling System Full stroke testing of this valve uring power operation would result in non-compliance with Technical Specification 3/4.5.2, which requires this valve to be closed with power to the valve operator removed.

 ATTACHMENT 5 PAGE 7 OF 12

- * 3HV8152, Isolation Valve SDCS Heat Exchanger E004 Inlet Same as HV-0396.
- * 3HV8153, Isolation Valve SDCS Heat Exchanger E003 Inlet Same as HV-0396.
- * 3HV8160, Flow Control Valve SDCS Heat Exchanger Bypass Full stroke exercising of this valve during power operation would result in non-compliance with Technical Specification 3/4.5.2, which requires this valve to be open with power removed.
- * 3HV8161, Block Valve LPSI to SDCS Heat Exchanger Bypass Same as HV-8160.
- * 3HV8162, Block Valve LPSI Pump 3P015 Miniflow Same as HV-8160.
- * 3HV8163, Block Valve LPSI Pump 3P016 Miniflow Same as HV-8160.
- * 3HV9337, Isolation Valve SDCS to LPSI Pump Suction This valve is required by Technical Specification 3/4.5.2 to be interlocked to prevent opening whenever reactor coolant system pressure exceeds 376 psia.
- * 3H '..., Isolation Valve Shutdown Cooling System from RCS Loop 2 Same HV-9337.
- * 3HV9340, Safety Injection Tank TOO8 Outlet Valve to RCS Loop 1A Restoring power to this valve or opening this valve while the plant is at power would result in non-compliance with the Technical Specifications.
- * 3HV9345, Safety Injection Tank TOOB Vent During power operation, Technical Specifications require power to be locked out for this valve. This prevents inadvertent pressurization of the SIT.
- * 3HV9350, Safety Injection Tank T009 Outlet Valve to RCS Loop 18 Same as HV-9340.
- * 3HV9355, Safety Injection Tank T007 Vent Valve Same as HV-9345.
- * 3HV9360, Safety Injection Tank T009 Outlet Valve to RCS Loop 2A Same as HV-9340.
- * 3HV9365, Safety Injection Tank T009 Vent Valve Same as HV-9345.

- * 3HV9370, Sarety Injection Tank TO10 Outlet Valve to RCS Loop 2B Same as HV-9340.
- * 3HV9375, Safety Injection Tank T009 Vent Valve Same as HV-9345.
- * 3HV9377, Isolation Valve SDCS Bypass to LPSI Suction Same as HV-9337.
- * 3HV9378, Isolation Valve SDCS Bypass to LPSI Suction Same as HV-9337.
- * 3HV9420, Control Valve HPSI Header #1 to RCS L 2 Hot Leg Same as HV-0396.
- * 3HVS434, Control Valve HPSI Header #2 to RCS Loop 1 Hot Leg Same as HV-0396.
- * S31204MU012 (4-012-C-358), HPSI Pump 3P017 Discharge Check Valve This valve cannot be exercised while the plant is at power because the HPSI pump cannot o groome RCS pressure. To exercise disc to fully open position requires 200 GPM.
- * S31204MU015 (4-015-C-358), HPSI Pump 3P019 Discharge Check Valve Same as S31204MU012.
- * S31204MU016 (4-016-C-358), HPSI Pump 3P018 Discharge Check Valve Same as S31204MU012.
- * S31204MU017 (4-017-C-553), HPSI Pumps 3P018 & 3P019 to #2 High Pressure Header Same as S31204MU012.
- * \$31204MU018 (3-618-A-551), HPSI Combined Header to RCS Loop 1A Check Valve

 Exercising this valve while the plant is at power would result in non-compliance with Technical Specification 3/4.3.5.2.
- * S31204MU019 (3-U19-A-551), KPSI Combined Header to RCS Loop 1B Check Valve Same as S31204MU018.
- * S31204MU020 (3-020-A-551), HPSI Combined Header to RCS Loop 2A Check Valve Same as S31204MU018.
- * S31204MUC21 (3-021-A-551), HPSI Combined Header to RCS Loop 2B Check Valve
 Same as S31204MUC18.

- * S31204MU024 (10-024-C-406), LPSI Pump 3P015 Discharge Stop Check Valve While the plant is at power, LPSI pumps cannot overcome RCS pressure. Additionally, aligning the system discharge to the RWST would defeat both trains of LFSI.
- * S31204MU025 (10-025-C-406), LPSI Pump 3P16 Discharge Stop Check Valve Samo as S31204MU024.
- * S31204MU027 (12-027-A-551), Safety Injection Headers to RCS Loop 1A Check Valve

 During power operation, there is no full flow path available to stroke test this valve. Neither the LPSI nor HPSI pumps can overcome the RCS pressure. Requires 2000 gpm for full stroke.
- * S31204MU029 (12-029-A-551), Safety Injection Headers to RCS Loop 1B Check Valve Same as S31204MU027.
- * S31204MU031 (12-031-A-551), Safety Injection Headers to RCS Loop 2A Check Valve Same as S31204MU027.
- * S31204MU033 (12-033-A-551), Safety Injection Headers to P.CS Loop 2B Check Valve Same as S31204MU027.
- * S31204MU040 (12-040-A-551), Safety Injection Tank T008 Outlet Check Valve
 Opening this valve during power operation is not possible against normal RCS operating pressure. A partial stroke test is the only test possible during Cold Shutdown due to system configuration. See Valve Relief Request Number 11.
- * S31204MU041 (12-041-A-551), Safety Injection Tank T007 Outlet Check Valve Same as S31204M 040.
- * S31204MU042 (12-042-A-551), Safety Injection Tank T009 Outlet Check Valve Same as S31204MU040.
- * S31204MU043 (12-043-4-551), Safety Injection Tank T010 Outlet Check Valve Same as S31204MU040.
- * S31204MU072 (8-072-A-552), LPSI to RCS Loop 1A Check Valve
 There is no flow path to exercise this valve during power operation.
 LPSI pumps cannot overcome RCS pressure while the plant is at power.

REVISION 7 PAGE 154 OF 208
ATTACHMENT 5
TCN 7 16

UNIT 3

- * \$31204MU073 (8-073-A-552), LF3I to RCS Loop 1B Check Valve Same as \$31204MU072.
- * S31204MU074 (8-074-A-552), LPSI to RCS Loop 2A Check Valve Same as S31204MU072.
- * S31204MU075 (8-075-A-552), LPSI to RCS Loop 2B Check Valve Same as S31204MU072.
- * S31204MU087 (16-087-C-675), Containment Spray Pump 3P013 Suction Check Valve Same as S31206MU012.
- * S31204MU088 (16-088-C-675), Containment Spray Pump 3P012 Suction Check Valve Same as S31206MU012.
- * S31204MU152 (3-152-A-551), To #2 HPS1 Header
 Valve cannot be stroked at power because the HPSI pumps cannot
 overcome Reactor Coolant System pressure. Additionally, opening the
 HPSI Header Isolation Valve during power operation would result in
 non-compliance with Technical Specification 3/4.5.2.
- * S31204MU155 (3-155-C-551), HPSI Header #1 to RCS Loop #2 Hot Leg Exercising this valve while the plant is at power would result in non-compliance with Technical Specification 3/4.3.5.2. In addition, while the plant is at power, HPSI pumps cannot overcome RCS pressure.
- * S31204MU156 (3-156-A-551), HPSI Header #1 to RCS Loop #2 Hot Leg Inlet Check Valve Same as S31204MU155.
- * S31204MU15, (3-157-A-550), hPSI Header #2 to RCS Loop #1 Hot Leg Same as S31204MU155.
- * S31204MU158 (3-158-A-550), HPSI Header #1 to RCS Loop #2 Hot Leg Same as S31204MU155.
- ** System: Steam
- * 3HV8204, Steam Generator E089 Main Steam Isolation Valve (MSIV) Full stroke exercising at full plant power would cause a loss of 50 % of our heat removal from the primary coolant system, a reactor trip on assymetric power in the core and actuation of the steam and pressurizer (primary) reliefs.
- * 3HV8205, Steam Generator E088 Main Steam Isolation Valve (MSIV) Same as HV-8204.

ENGINEERING PROCEDURE S023-V-3.5 REVISION 7 ATTACHMENT 5

PAGE 155 OF 208

UNIT 3

- * 3HV8419, Main Steam Dump to Atmosphere Full stroke exercising this valve during power operation could result in a reactor plant transient due to energy released via the steam dump.
- # 3HV8421, Main Steam Dump to Atmosphere Same as HV-0419.

ENGINEERING PROCEDURE S023-V-3.5 REVISION 7 ATTACHMENT 6

PAGE 156 OF 208

ASME XI

TABLE IWV-3510-1

CATEGORY C - SAFETY AND RELIEF VALVES

Testing Schedule

Time Period	Number of Valves to be Tested
Startup through 1st refueling	Minimum of $N_1/60 \times total$ valves in this category [Note (1)]
lst refueling through 2nd refueling	Additional valves to make cumulative tested at least $N_2/60 \times total$ valves in this category [Note(1)]
2nd refueling through 3rd refueling etc.	Additional valves to make cumulative tested at least $N_2/60 \times total$ valves in this category, etc. [Note(1)]

NOTE .

(1) N₁, N₂, N₃, etc., are the numbers of months from startup to first refueling, Second refueling, third refueling, etc. When N is a number larger than 60, all valves which have not been tested during the preceding 5 year period shall be tested. The following period shall then be considered to be the same as "startup to first refueling" for purposes of determining test frequency, with the added requirement that at each refueling all valves which have not been tested during the preceding 5 year period shall be tested. The subsequent period will be considered the same as the first refueling to the second refueling, etc., with N determined by counting months from the new starting point.

VALVE RELIEF REQUEST INDEX

YRR No.	Subject	Page
1	(Withdrawn - justification for Reactor Coolant system check valve 3-152-A-551 was moved to the cold shutdown table)	160
4	Alternate Testing for Safety Injection System Check Values; 24-001-C-724, Rw Tank 2T005 to Spray Pump 2P012 Section Header, and, 24-002-C-724, RW Tank 2T005 to Spray Pump 2P013 Section Header	161
3	Siternate Testing for Safety Injection System Check Valves; 24-003-C-724, Outlet Check Valve - Containment Emergency Sump, and, 24-004-C-724, Outlet Check Valve - Containment Emergency Sump	166
•	(Withdrawn - justification for Safety Injection system check valve 3-155-C-551 was moved to the cold shutdown table)	169
5	(Withdrawn - justification for Safety Injection sistem check valve 3-156-C-551 was moved to the cold shutdown table)	170
6	(Withdrawn - justification for Safety Injection system check valves 3-157-A-550 and 3-158-A-550 were moved to the cold shutdown table)	171
,	(Withdrawn - justification for Safety Injection system check valves 4-012-C-358, 4-015-C-358, and 4-016-C-358 were moved to the cold shutdown table)	172
8	Alternate Testing for Safety Injection System Check Valves; 10-006-C-675, HPSI Pumps 2P017 and 2P018 Suction Check Valve, and, 10-008-C-675, HPSI Pumps 2P018 and 2P019 Suction Check Valve	173
	(Withdrawn - justification for Safety Injection system check valve 4-017-C-553 was moved to the cold shutdown table)	174
10	(Withdrawn - justification for Safety Injection system check valves 3-018-A-551, 3-019-A-551, 3-020-A-551 and 3-021-A-551 were moved to the cold shutdown table)	175
11	Alternate Testing for Safety Injection System Check Valves; 12-040-A-551, Safety Injection Tank T008 Outle. Check Valve, 12-041-A-551, Safety Injection Tank T007 Outlet Check Valve, 12-042-A-551, Safety Injection Tank T009 Outlet Check Valve, and, 12-043-A-551, Safety Injection Tank T010 Outlet Check Valve	176

ENGINEERING PROCEDURE S023-V-3.5
REVISION 7 PAGE 158 OF 208
ATTACHMENT 7
TCN 7-16

VALVE RELIEF REQUEST INDEX (Continued)

VRR No.	Subject	Page
12	Alternate 131 no for Safety Injection System Check Valves; 16-077-C-645, LPSI Pump 2PG16 Suction Header Check Valve, 16-084-C-645, LPSI Pump 2PG15 Suction Check Valve, 16-199-C-645, LPSI Pump 2PG15 Suction Header Check Valve, and, 16-201-C-645, LPSI Pump 2PG15 Suction Header Check	179
	Valve	1/9
13	Alternate Testing for Containment Spray System Check Valves; 8-004-C-406, Containment Isolation Stop Check Valve - Spray Header #1, 8-006-C-405, Containment Isolation Stop Check Valve - Spray Header #2	182
14	Alternate Testing for Chemical and Volume Control System Check Valve 2-122-C-554, Charging Pumps Check Valve to Regen Heat Exchanger E063	185
15	(Withdrawn - Testing of HVAC system valves 2(3)HV7800, 2(3)HV7801, 2(3)HV7802, 2(3)HV7803, 2(3)HV7805, 2(3)HV7806, 2(3)HV7810 and 2(3)HV781) only if a containment purge is not in progress)	186
16	All Power Operated Valves	187
17	(Withdrawn - Testing of the vacuum breaker on the spray additive tanks (Valve 2-159-C-511))	189
18	Alternate Testing for Main Steam System Check Valves; 4-003-D-620, Steam Supply - S/G E088 to AFP Turbine K007 Check Valve, and, 4-005-D-620, Steam Supply - S/G E089 to AFP Turbine K007 Check Valve	190
19	(Withdrawn - Testing of HVAC system valves HV9948, HV9950, HV9949 and HV9951 at cold shutdown intervals is explained in the cold shutdown table)	193
20	Alternate Testing for Condensate and Feed ater System Check Valves; 20-036-C-609, Main Feed Check at Steam Generator E089, and, 20-129-C-609, Main Feed Check at Steam Generator E088	194
21	(Withdrawn - HV-8204 and HV-9949 will be exercised as required by the code. Valve Test Interval Justification moved to Cold Shutdown Tables)	197
22	(Withdrawn - Containment Spray valves 2-054-C-611 and 2-069-C-611 will be exercised open quarterly)	198

ENGINEERING PROCEDURE S023-V-3.5 REVISION 7 ATTACHMENT 7 TCN 7-16

PAGE 159 OF 208

VALVE RELIEF REQUEST INDEX (Continued)

YRR No.	Subject	Page
23	Use of Average/Reference Stroke time in determining entry into increased frequency testing (ALERT)	199
24	Determining the portion of Cold Shutdown interval valves to be tested in an outage	201
25	Atmospheric Dump Valve Stroke Testing Frequency	203

ENGINEERING PROCEDURE SU23-V-3.5 REVISION 7 ATTACHMENT 7 TCN 7-16

PAGE 160 OF 208

VALVE RELIEF REQUEST NO. 1

This VRR was withdrawn by letter, SCE to NRC, Docket No. 50-361, July 5, 1983. The refueling interval testing justification for Reactor Coolant system check valve 3-152-A-551 was moved to the cold shutdown table.

ENGINEERING PROCEDURE S023-V-3.5 REVISION 7 ATTACHMENT 7 TCN 7-16

PAGE 161 OF 208

VALVE RELIEF REQUEST NO. 2

System: Safety Injection

Components:

Safety Injection System Check Valves:

24-001-C-724, RW Tank 2T005 to Spray Pump 2P012 Suction Header, 24-002-C-724, RW Tank 2T005 to Spray Pump 2P013 Suction Header

Class:

Function:

These valves prevent back-flow from the High Pressure Safety Injection Suction Header, Low Pressure Safety Injection Suction Header and Spray Pump Suction header to the Refueling Water Storage Tanks (RWST's).

Test Requirement:

1WV-3411, exercise these valves open and closed every three months.

Basis for Relief:

INTRODUCTION

The source of flow to these valves is borated water from the RWST's. the pumps that produce flow through these valves are the High pressure Safety Injection (HPSI), Low Pressure Safety Injection (LPSI) and Containment Spray pumps. They discharge into the Reactor Coolant System (RCS) or containment building spray neaders.

These safety injection system check valves prevent post accident recirculation flow from escaping the normal flow path into the RWST. Plant conditions can be grouped into three test situations with respect the these valves; (1) RCS Pressurized and at normal operating temperature, (2) RCS depressurized and cooled down. and, (3) RCS open during refueling. These conditions are discussed below:

ENGINEERING PROCEDURE S023-V-3.5
REVISION 7 PAGE 162 OF 208
ATTACHMENT 7
TCN 7-16

VALVE RELIEF REQUEST NO. 2 (Continued)

Basis for Relief: (Continued)

(1) RCS PRESSURIZED AND AT NORMAL OPERATING TEMPERATURE

These valves cannot be full-stroked using flow during power operation, for the following reasons:

a. The HPSI (shutoff head 1500 psi) are LPSI (shutoff head 200 psi) pumps are unable to overcome RCS system pressure (nominal operating pressure = 2000 psi). There is no full flow recirculation to the RWST from either pump.

As a result, only pump recirculation through the miniflow line is produced using these pumps while the RCS is pressurized. Although this is sufficient for a partial stroke test, flow for a full-stroke test is not available.

- b. A quarterly test at power, using the only available flow path, would either inject borated water into the RCS or spray down the containment building or both. If injection were possible during operation, the test would not be performed because the result would be an immediate, uncontrolled and complete reactor shutdown (as a result of the borated water) and/or flooding and resultant degradation of the components and systems located in the containment building (as a result of the containment building spray down).
- c. The containment spray pumps cannot be utilized to full-stroke these valves using flow, as the only full flow path during plant operation is through the containment spray header and nozzles.

(2) RCS DEPRESSURIZED AND COOLED DOWN

These valves cannot be full-stroked using flow during cold shut-down for the following reasons:

- a. TEr WILL ALL PUMPS IN A LOOP: Sufficient flow to fu croke the RWST outlet check valves is not achievable in this condition. Return flow from the HPSI and LPSI pump discharge lines is very limited, consisting of mini-flow recirculation lines and RCS vent lines.
- b. TESTING WITH THE CONTAINMENT SPRAY PUMP: The containment Spray (CS) pumps have a 6" recirculation line to the RWST's, but these pumps by themselves cannot develop full-stroke flow for the RWST outlet check valves.

VALVE RELIEF REQUEST NO. 2 (Continued)

Basis for Relief: (Continued)

(2) RCS DEPRESSURIZED AND COOLED DOWN (Continued)

- c. TESTING WITH THE LPSI PUMPS: Stroking the RWST outlet check valves with flow from the LPSI pumps is prohibited by the Technical Specifications in Cold Shutdown because the LPSI pumps must be aligned to take suction from Law RCS to provide shutdown cooling during this mode of operation. The LPSI pumps cannot, therefore, take a suction through the RWST outlet check valves.
- d. TESTING WITH THE HPSI PUMPS: The equivalent of the combined CS. LPSI, and HPSI flowrate cannot be developed with the HPSI pump alone. The HPSI pumps cannot be used to exercise these valves during cold shutdown because of the risk of exceeding cooldown rate limits. The barated water in the RWST is normally at an ambient temperature of # 65° f and the cooled down RCS is numinally at # 135° F.
- e. <u>CONCLUSION:</u> The Code required testing of the RWST outlet check valves while the plant is in Cold Shutdown could only be performed after significant redesign of the system, such as the addition of an instrumented full flow test line.

(3) RCS OPEN DURING REFUELING

a. FLOW PATH: The RWST outlet check valves are in the 24" supply line to the suction headers of the HPSI, LPSI and Containment Spray Pumps. To full-stroke the RWST outlet check valves using flow during refueling with the Reactor Vessel head removed, would require that the system achieve a test flow of approximately 6500 gpm (full accident flow). There is one check valve for each of the two trains of pumps. Full flow from the RWST through the check valves of interest is only achieved with all of the pumps in one train running at the same time (one HPSI pump, one LPSI pump and one Spray pump).

A large flow could be achieved in the refueling mode during refueling cavity fill. The HPSI, LPSI and containment Spray pumps could take a suction from the RWST and discharge to the RCS. With the Reactor Pressure Vessel head removed, flow would first fill and then overflow the Reactor Pressure Vessel into the Refueling Cavity.

PAGE 164 OF 208

VALVE RELIEF REQUEST NO. 2 (Continued)

Basis for Relief: (Continued)

(3) RCS OPEM DURING REFUELING (Continued)

The only discharge path that exists COOLDOWN LIMITS: for this flow is into the core through the safety injection headers to the cold legs and/or the 6" recirculation line from the Containment Spray pump discharge to the RWST (this 6" line alone has insufficient capacity for the full-stroke of the RWST outlet check valves using flow). The borated water in the RWST is normally at an ambient temperature of = 65° F and the Cooled down RCS is nominally at = 136° F.

Injection of the borated RWST water could result in a cool-down rate in violation of the Technical Specifications (See Figure 3.4-5, RCS Maximum Allowable Cool-Down Rates) for the reactor vessel.

CONCLUSION

From the above discussion, it can be seen that no allowable flow path exists in any plant mode for a full-stroke of the RWST outlet check valves using flow. Testing of these valves could only be accomplished after significant redesign of the system, such as installation of a fully instrumented full flow test loop. NRC Generic Letter 89-04, Attachment 1, Position 2, identifies partial disassembly and inspection as an acceptable alternative for stroking a valve when it is impractical to use flow. In this case, there is no way to stroke these valves with the existing system design using flow.

TEST SCHEDULE

Disassemble and inspect both of these valves each refueling outage requires the associated piping to be drained. This generates a significant amount of liquid radioactive waste. In addition, considerable radiation exposure can be received by personnel performing the partial disassembly, hand stroking and inspection. As a consequence, there is a clear advantage in reducing the number of partial disassembly and hand stroking tests required in each refueling.

ENGINEERING PROCEDURE S023-V-3.5
REVISION 7 PAGE 165 OF 208
ATTACHMENT 7
TCN 2-16

VALVE RELIEF REQUEST NO. 2 (Continued)

Alternate Testing:

Quarterly, perform a partial stroke test (open) of each valve using system flow. At each refueling outage, test the valve by partial disassembly, inspection and manual stroking on a rotating basis (one valve per refueling).

During partial disassembly, the valve internals will be visually inspected for worn or corroded parts, and the valve disk will be manually exercised. If it is found that the full stroke capability of the disassembled valve is in question, the other valve will be similarly disassembled and inspected and manually full stroked during the same outage. Following reassembly, the valve will be tested by partial stroking using system flow.

We will actively pursue the use of non-intrusive diagnostic techniques to demonstrate that these valves swing fully open during partial flow testing. When another method is developed to verify the full-stroke capability of these check valves, this relief request will be revised or withdrawn.

Notes:

- (1) The NRC Safety Evaluation Report transmitted by letter, L. E. Kokajko (NRC) to H. B. Ray (SCE) and G. D. Cotton (SDG&E), Safety Evaluation Report of the Inservice Testing (IST) Program for Pumps and Valves, September 24, 1990, Table 1, has required that a full stroke test using flow be accomplished at refueling intervals for these valves. (See NRC SER, § 4.2.2.3) Relief was denied for partial disassembly and inspection.
- (2) This version was submitted by letter, R. M. Rosenblum to NRC, Inservice Test..., Program for Pumps and Valves TAC Nos. 55120/1, July 31, 1991.
- (3) NRC approval of the current version, above, was documented in letter, James ¿. Dyer to H. B. Ray and G. D. Cotton, Safety Evaluation of Licensee Responses to Staff's Technical Evaluation Report Items and Revised Relief Requests to the IST Program for Pumps and Valves, October 2, 1991.

ENGINEERING PROCEDURE S023-V-3.5 REVISION 7 ATTACHMENT 7 TCN 7-16

PAGE 166 OF 208

VALVE RELIEF REQUEST NO. 3

System:

Safety Injection

Components:

Safety Injection System Check Valves:

24-003-C-724, Outlet Check Valve - Containment Emergency Sump 24-004-C-724, Outlet Check Valve - Containment Emergancy Sump

Category:

Class:

Function:

These valves open to provide recirculation flow from the containment sump to the suction piping of the HPSI, LPSI and Containment Spray pumps.

Test Requirement:

IWV-3411, exercise these valves every three months.

Basis for Relief:

Test Methodology

NORMAL PLANT OPERATION

The only source of water to the inlet of the containment sump outlet check valves is the containment building sump. During normal plant operation this sump is required to be kept dry and the isolation valves shut. This system lineup precludes either full-stroke or partial stroke of these check valves using flow in this mode.

ENGINEERING PROCEDURE S023-V-3.5 REVISION 7 ATTACHMENT 7

PAGE 167 OF 208

VALVE RELIEF REQUEST NO. 3 (Continued)

Basis for Relief: (Continued)

COLD SHUTDOWN AND REFUELING MODES

In cold shutdown or reactor refueling modes, part stroke exercising of these valves is possible with flow from the containment sump, however, the sump is not maintained at a cleanliness level consistent with the internals of the Safety Injection or Reactor Coolant system piping. The cleanup of the containment sump to a cleanliness level consistent with the internals of the Safety Injection or Reactor Coolant system would be labor intensive.

If part stroke exercising were conducted by filling the sump with water and flow testing these valves, this would potentially contaminate the safety injection systems, the refueling water storage tank, and/or the reactor coolant system with low quality water. This contamination of the systems would cause accelerated corrosion and degradation. Extensive flushing and cleanup following such testing would therefore be required.

CONCLUSION

The Code required testing could only be performed after significant system modifications involving considerable costs. These system modifications would involve additional containment penetrations and long runs of large diameter piping with associated supports and isolation valves. NRC Generic Letter 89-04, Attachment 1, Position 2, identifies partial disassembly and inspection as an acceptable alternative for stroking a valve when it is impractical to use flow. In this case, there is no practical way to full-stroke these check valves using flow with the existing system design.

TEST SCHEDULE

Disassembly and inspection of these valves each refueling outage requires the associated system piping to be drained. This generates a significant amount of liquid radioactive waste. This generates a significant amount of liquid radioactive waste. In addition, considerable radiation exposure can be received by personnel performing the partial disassembly, hand stroking and inspection. As a consequence, there is a clear advantage in reducing the number of these tests required in each refueling.

ENGINEERING PROCTOURE S023-V-3.5
REVISION 7 PAGE 168 OF 208
ATTACHMENT 7
TCN 7 16

VALVE RELIEF REQUEST NO. 3 (Continued)

Alternate Testing:

The valves will be partially disassembled, inspected and manually full stroked at each refueling outage on a rotating basis (one valve per refueling). During partial disassembly, the valve internals will be visually inspected for worn or corroded parts, and the valve disk will be manually exercised. If it is found that the full stroke capability of the disassembled valve is in question, the other valve will be similarly disassembled and inspected and manually full stroked during the same outage.

A method of partial flow testing will be developed and used following the partial disassembly and prior to returning the valve(s) to service. Additionally, we will actively pursue the use of non-intrusive diagnostic techniques to demonstrate that these valves swing fully open during partial flow testing. When another method is developed to verify the full-stroke capability of these check valves, this relief request will be revised c withdrawn.

Note:

- (1) NRC Safety Evaluation Report transmitted by letter, L. E. Kokajko (NRC) to H. B. Ray (SCE) and G. D. Cotton (SDG&E), Safety Evaluation Report of the Inservice Testing (IST) Program for Pumps and Valves, September 24, 1990, Table 1, has required that a post-inspection, part-stroke exercise test be performed following the refueling interval partial disassembly and manual stroking.
- (2) This version was submitted by letter, R. M. Rosenblum to NRC, Inservice Testing Program for Pumps and Valves TAC Nos. 55120/1, July 31, 1991.
- (3) This revision commits to a PARTIAL STROKE TEST of these valves (each valve each refueling). One way this can be accomplished is using a portable pump discharging clean water to the 2" test connection at the valve inlet (See P&ID 40112A, Coord. B-6), isolating the containment sump, RWST, IPSI and Spray pumps from the valve outlet and verifying that there is appropriate flow from a vent or drain downstream of the valve under test.

ENGINEERING PROCEDURE 5023-V-3.5
REVISION 7 PAGE 169 OF 208 ATTACHMENT 7 TCN 7-16

VALVE RELIEF REQUEST NO. 4

This VRR was withdrawn by letter, SCE to NRC, Docket No. 50-361, July 5, 1983. The refueling interval testing justification for Safety Injection system check valve 3-155-C-551 was moved to the cold shutdown table.

ENGINEERING PROCEDURE S023-V-3.5
REVISION 7 PAGE 170 OF 208
ATTACHMENT 7
TCN 7-16

VALVE RELIEF REQUEST NO. 5

This VRR was withdrawn by letter, SCE to NRC, Docket No. 50-361, July 5, 1983. The refueling interval testing justification for Safety Injection system check valve 3-156-C-551 was moved to the cold shutdown table.

ENGINEERING PROCEDURE S023-V-3.5
REVISION 7 PAGE 171 OF 208
ATTACHMENT 7
TCN 7-16

VALVE RELIEF REQUEST NO. 6

This VRR was withdrawn by letter, SCE to NRC, Docket No. 50-361, July 5, 1983. The refueling interval testing justification for Safety Injection system check valves 3-157-A-550 and 3-158-A-550 were moved to the cold shutdown table.

ENGINEERING PROCEDURE S023-V-3.5
REVISION 7 PAGE 172 OF 208
ATTACHMENT 7
TCN 7-16

VALVE RELIEF REQUEST NO. 7

This VRR was withdrawn by letter, SCE to NRC, Docket No. 50-361, July 5, 1983. The refueling interval testing justification for Cafety Injection system check valves 4-012-C-358, 4-015-C-358, and 4-016-C-358 were moved to the cold shutdown table.

ENGINEERING PROCEDURE SO23-V-3.1 PAGE 173 07 208 REVISION 7 ATTACHMENT 7 TCN 7 16

VALVE RELIEF REQUEST NO. 8

System:

Safety Injection

Components:

Safety Injection System Check Valves:

10-006-C-675, HPSI Pumps 2P017 and 2P018 Suction Check Valve, and, 10-008-C-675, HPSI Pumos 2P018 and 2P019 Suction Chack Valve.

Category

Class: 2

Function: These valves open to allow a flow of water into the suction piping

of the high pressure safety injection pumps.

Test Requirement:

IWV-3411, exercise these valves every three months.

Basis for Relief:

This check valve cannot be full stroke exercised during power operations because the high pressure safety injection pumps cannot overcome reactor coolant system pressure. During cold shutdown full stroke exercising this valve could result in a low temperature over-pressurization of the reactor coolant system.

Alternate Testing:

These valves will be full stroke exercised at each refueling, while using the high pressure safety injection pumps to fill the refueling pool canal, and part stroke exercised quarterly during routine inservice testing of the HPSI pumps.

Notes:

- (1) This version was submitted by letter, SCE to NRC, Docket Nos. 50-361, July 5, 1983
- (2) This Relief Request has been approved. See NRC Safety Evaluation Report transmitted by letter, L. E. Kokajko (NRC) to H. B. Ray (SCE) and G. D. Cotton (SDG&E), Safety Evaluation Report of Te Inservice Testing (IST) Program for Pumps and Values, September 24, 1990, Table 1 and TER, # 4.2.2.1.

ENGINEERING PROCEDURE S023-V-3.5
REVISION 7 PAGE 174 OF 208
ATTACHMENT 7
TCN 7-16

VALVE RELIEF REQUEST NO. 9

This VRR was withdrawn by letter, SCE to NRC, Docket No. 50-361, July 5, 1983. The refueling interval testing justification for Safety Injection system check valve 4-017-C-553 was moved to the cold shutdown table.

ENGINEERING PROCEDURE SO23-V-3.5
REVISION 7 PAGE 175 OF 208
ATTACHMENT 7
TCN 7-16

VALVE RELIEF REQUEST NO. 10

This VRR was withdrawn by letter, SCE to NRC, Docket No. 50-361, July 5, 1983. The refueling interval testing justification for Safety Injection system check valves 3-018-A-551, 3-019-A-551, 3-020-A-551 and 3-021-A-551 were moved to the cold shutdown table.

ENGINEERING PROCEDURE S023-V-3.5 REVISION 7 ATTACHMENT 7 TCN 7-16

PAGE 176 OF 208

VALVE RELIEF REQUEST NO. 11

System:

Safety Injection

Components:

Safety Injection System Check Valves;

12-040-A-551, Safety Injection Tank T008 Outlet Check Valve, 12-041-A-551, Safety Injection Tank T007 Outlet Check Valve. 12-042-A-551. Safety Injection Tank T009 Outlet Check Valve,

12-043-A-551, Safety Injection Tank TO10 Outlet Check Valve.

Category:

AC

Class:

Function:

These valves open to allow a flow of water from the Safety Injection Tanks into the Safety Injection Header of each Primary loop.

Test Requirement:

IWV-3411, exercise these valves every three months.

Basis for Relief:

DURING NORMAL OPERATION

These check valves cannot be stroked during normal operation without violating the Technical Specification requirements for safety injection tank pressure and level bands. In addition, these valves cannot be full stroked except under actual loss of coolant accident conditions, i.e. no full flow path available.

- The SIT pressure is = 600 psi and cannot overcome RCS system pressure (nominal operating pressure * 2000 psi). As a result, no flow through these check valves is possible during normal operation.
- A quarterly test at power using flow (if it were possible) b. would not be performed because it would inject borated water into the RCS. If injection were possible during operation, the result would be an immediate, uncontrolled and complete reactor shutdown (as a result of the borated water).

PAGE 177 OF 208

VALVE RELIEF REQUEST NO. 11 (Continued)

Basis for Relief: (Continued)

DURING COLD SHUTDOWN OPERATION

During cold shutdown, a full-stroke using flow cannot be accomplished because it could lead to a low-temperature over-pressurization of the RCS due to the lack of expansion volume necessary to accommodate the large quantity of water which must be discharged into the RCS. Further, this flow path is not equipped with the flow rate instrumentation necessary to verify a full-stroke of these check valves.

CONCLUSION

Code required testing can only be performed after significant modifications, such as installation of an instrumented test loop full-stroke testing these valves using flow. The high costs of the necessary design changes involved would not be justified by the improvement of the valve testing. Further, the addition of valves and piping to the system could result in reduced plant reliability. NRC Generic Letter 89-04, Attachment 1, Position 2, identifies partial disassembly and inspection as an acceptable alternative for stroking a valve when it is impractical to use flow. In this case, there is no way to full-stroke these valves with the existing system design using flow.

TEST SCHEDULE

Because of its effect on the operability of the associated equipment, performing a test by partial disassembly and hand stroking requires considerable manipulation of plant conditions and imposes significant restrictions on the structure of a refueling outage. Because of the need for draining systems in order to disassemble the valves, performance of these tests generates a significant amount of radicactive liquid waste. Considerable radiation exposure can received by personnel performing the tests. As a consequence, there is a clear advantage in reducing the number of these tests required in each refueling.

Alternate Testing:

Partial stroke test these check valves on a cold shutdown interval.

At refueling intervals, test these valves by partial disassembly and hand stroking. The valve internals shall be visually inspected for worn or corroded parts, and the valve disks shall be manually exercised.

VALVE RELIEF REQUEST NO. 11 (Continued)

Alternate Testing: (Continued)

It shall be verified that the valve is capable of full-stroking and that the internals of the valve are structurally sound. This testing shall be conducted at each refueling outage on a rotating basis. One valve of this group will be tested each successive refueling outage, until the entire group has been tested.

If the disassembled valve is not capable of being full-stroke exercised or there is binding or failure of the valve internals, the remaining valves in this group shall also be disassembled, inspected, and manually full-stroke exercised during the same outage.

A partial flow test shall be performed on the disassembled valve before it is returned to service.

Additionally, we will actively prove the use of non-intrusive diagnostic techniques to demonstrate that these valves swing ally open during partial flow testing. When another method is developed to verify to full-stroke capability of these check valves, this relief request will be revised or withdrawn.

Notes:

- (1) This version was submitted by letter, R. M. Rosenblum to NRC, Inservice Testing Program for Pumps and Valves TAC Nos. 55120/1, July 31, 1991
- (2) This kelief Request has been approved provided a partial flow test is performed on the disassembled valves before they are returned to service and all valves in this group receive a part-stroke exercise on a cold shutdown interval. See NRC Generic Letter 89-04, Position 2, and NRC Safety Evaluation Report transmitted by letter, L. E. Kokajko (NRC) to H. B. Ray (SCE) and G. D. Cotton (SDG&E), Safety Evaluation Report of the Inservice Testing (IST) Program for Pumps and Valves, September 24, 1990, Table 1.

ENGINEERING PROCEDURE S023-V-3.5 REVISION 7 ATTACHMENT 7 TCN 7 - 16

PAGE 179 OF 208

VALVE RELIEF REQUEST NO. 12

System: Safety Injection

Components:

Safety Injection System Check Valves;

16-077-C-645, LPSI Pump 2P016 Suction Header Check Valve,

16-084-C-645, LPSI Pump 2P015 Suction Check Valve,

16-199-C-645, LPSI Pump 2P015 Suction Header Check Valve, and,

16-201-C-645. LPSI Pump 2P015 Suction Header Check Valve.

Category:

Class:

Function:

These valves open to allow a flow of water from the refueling water storage tank (RWST) into the suction piping of the Low

Pressure Safety Injection (LPSI) pumps.

Test Requirement:

IWV-3411, exercise these valves every three months.

Basis for Relief:

DURING POWER OPERATION

Full-stroke exercising of the LPSI pump suction check valves with flow requires the passage of the maximum required accident flow rate through the valves. The LPSI suction checks are in the suction lines of the associated LPSI pumps and deliver borated water to these pumps from the RWST's. The pumps in turn discharge to the RCS, Shutdown Cooling heat exchanger and the mini-flow recirculation lines (returning the flow to the RWST's).

These valves cannot be full-stroke exercised using flow during power operation, for the following reasons:

- a. The mini-flow recirculation lines cannot provide enough flow through the LPSI pump suction check valves, as the maximum flow achievable through this path is less than required accident flow. Although this is sufficient for a partial stroke test, flow for a full-stroke is not available.
- During power operation, the Shutdown Cooling System is isolated and cannot be used as a flow path because it must remain isolated due to interlocks controlled by Technical Specification 3.4.5.2.d.

VALVE RELIEF REQUEST NO. 12 (Continued)

Basis for Relief: (Continued)

DURING POWER OPERATION (Continued)

c. Injecting water into the RCS during power operation is not possible. The Low Pressure Safety Injection (LPSI) pumps (shutoff head = 200 psi) are unable to overcome RCS system pressure (nominal operating pressure = 2000 psi) and therefore there can be no flow into the RCS in this plant mode. If a test at power could be conducted, it would result in injection of borated water into the RCS. The result would be an immediate, uncontrolled and complete reactor shutdown (as a result of the borated water).

COLD SHUTDOWN

The Technical Specifications require that the LPSI pumps remain aligned to provide shutdown cooling at all times while the plant is in Cold Shutdown. The LPSI suction check valves are, accordingly, bypassed and cannot be full-stroke tested using flow. Compliance with the Code requirement to perform quarterly testing could only be accomplished after a major modification of the system design. The improvement of the testing in cold shutdown would not justify the high costs involved.

Alternate Testing:

Quarterly, part-stroke exercise these valves.

A flow path exists during the filling of the refueling canal with the LPSI pumps in plant Mode 6 (refueling). The suction of the LPSI pumps can be aligned to the RWST and the discharge to the LPSI header or shutdown cooling header. Flow could then be directed through the LPSI Suction Header Check Valves at full flow (LPSI Pump Design Flow is 4150 gpm at 400 psid) for a short period of time sufficient to full-stroke these valves with flow. Therefore, the valves will be full stroke exercised using flow at reactor refueling intervals.

Notes:

(1) Relief has not been granted to allow partial disassembly and inspection on a sampling basis, See NRC Safety Evaluation Report transmitted by letter, L. E. Kokajko (NRC) to H. B. Ray (SCE) and G. D. Cotton (SDG&E), Safety Evaluation Report of the Inservice Testing (IST) Program for Pumps > "alves, September 24, 1990, Table 1. The NRC SER, ¶ 4.2.2.2, granted relief to part-stroke quarterly provided the valves are full-stroked with flow during refueling outages.

ENGINEERING PROCEDURE S023-V-3.5
REVISION 7 PAGE 181 OF 208
ATTACHMENT 7
TCN 7-16

VALVE RELIEF REQUEST NO. 12 (Continued)

Notes: (Continued)

- (2) The current version was submitted by letter, R. M. Rosenblum to NRC, Inservice Testing Program for Pumps and Valves TAC Nos. 55120/1, July 31, 1991
- (3) NRC approval of the current version, above, was documented in letter, James E. Dyer to H. B. Ray and G. D. Cotton, Safety Evaluation of Licensee Responses to Staff's Technical Evaluation Report Items and Revised Relief Requests to the IST Program for Pumps and Valves, October 2, 1991.

EKGINEERING PROLEDURE S023-V-3.5 PAGE 182 OF 208 REVISION 7 ATTACHMENT 7

VALVE RELIEF REQUEST NO. 13

System: Containment Spray

Components:

Containment Spray System Check Valves;

8-004-C-406, Containment Isolation Stop Check Valve - Spray

8-006-C-406, Containment Isolation Stop Check Valve - Spray

Header #2.

Category: AC

Class:

2

Function:

These valves open to allow a flow of water from the containment

spray pump discharge into the containment spray ring headers.

Test Requirement:

IWV-3411, exercise these valves every three months.

Basis for Relief:

FULL FLOW TESTING

These valves are in the line leading from the Containment Spray pump discharge to the riser inside the containment building that leads up to the ring headers and spray nozzles. As a consequence full-stroke exercising these valves through this flow path using the containment spray pumps would result in a containment spray down and consequent potential equipment damage as well as create additional liquid radwaste to be removed from the Containment Building sump.

PARTIAL FLOW TESTING

The riser inside the containment building that leads up to the ring headers and spray nozzles is drained each refueling and refilled prior to returning the plant to service. When the riser is being filled with water, the water can be put in the system upstream of each stop check valve. Therefore, this flow through the Spray Hezder Containment Isolation Stop Check Valves during the filling of the riser would result in a partial stroke of these valves.

PAGE 183 OF 208

VALVE RELIEF REQUEST NO. 13 (Continued)

Basis for Relief: (Continued)

CONCLUSION

A usable flow path does not exist in any pant mode to allow a full-stroke of the Contairment Isolation Stop Check Valves for the Spray Headers using flow. The Code required full-stroke testing using flow could only be performed after considerable modification of the system design, such as installation of an instrumented test loop. The high costs of the necessary design changes involved would not be justified by the improvement of the valve testing. Further, the additional valves, piping, supports and penetrations could result in reduced plant reliability. NRC Generic Letter 89-04. Attachment 1, Position 2, identifies partial disassembly and inspection as an acceptable alternative for stroking a valve when it is impractical to use flow. In this case, there is no way to stroke these valves with the existing system design using flow.

TEST SCHEDULE

Disassembly and inspection of both of these valves each refueling outage requires additional draining of the associated system piping over and above draining the riser as previously discussed. This generates a significant amount of radioactive liquid waste. In addition, considerable radiation exposure can be received by personnel performing the partial disassembly, hand stroking and inspection. As a consequence, there is a clear advantage in reducing the number of these tests required in each refueling.

Alternate Testing:

At each refueling cutage, (1) perform a partial stroke test (open) of each valve using system flow, and, (2) test the valves by partial disassembly, inspection and manual stroking on a rotating basis (one valve per refueling).

During partial disassembly the valve internals shall be visually inspected for worn or corroded parts, and the valve disks will be manually exercised. If it is found that the full stroke capability of the disassembled valve is in question, the other valve will be similarly disassembled and inspected and manually full stroked during the same outage.

ENGINEERING PROCEDURE S023-V-3.5 REVISION 7 ATTACHMENT 7 TCN 7-16

PAGE 184 OF 208

VALVE RELIEF REQUEST NO. 13 (Continued)

Atlernate Testing: (Continued)

following reassembly and prior to return to service, the valve will be tested by partial stroking using system flow. Additionally, we will actively pursue the use of non-intrusive diagnostic techniques to demonstrate that these valves swing fully open during partial flow testing. When another method is develored to verify the full-stroke capability of these check valves, this relief request will be revised or withdrawn.

- (1) The NRC Safety Evaluation Report transmitted by letter, L. E. Kokajko (NRC) to H. B. Ray (SCE) and G. D. Cotton (SDG&E), Safety Evaluation Report of the Inservice Testing (IST) Program for Pumps and Valves, September 24, 1990, Table 1, has required that a post-inspection, part-stroke exercise test be performed following the refueling interval partial disassembly and manual stroking. Also see the NRC SER, ¶ 4.3.1.1.
- (2) The current version was submitted by letter, R. M. Rosenblum to NRC, Inservice Testing Program for Pumps and Valves TAC Nos. 55120/1, July 31, 1991
- (3) The revised Alternate Testing adds partial stroking of the valve following partial disassembly. Air can be used to stroke the valve during the period when the riser is dry. The valve motion is confirmed using a listening device on the valve body. This operation can be conducted at the end of each refueling outage to satisfy the SER requirement for the post-disassembly partial flow test.

ENGINEERING PROCEDURE S023-V-3.5 REVISION 7 ATTACHMENT 7 TCX 7 - 16

PAGE 185 OF 208

VALVE RELIEF REQUEST NO. 14

System:

Chemical and Volume Control

Component: Check Valve Z-122-A-554

Category: AC

Class:

Function:

This valve pens to allow normal charging flow to the reactor coolant system. In addition, this valve is a containment isolation valve in the event of a charging line rupture.

Test Requirement:

IWV-341, exercise these valves every three months.

Basis for Relief:

Verifying closure of this valve requires a seat leak test (Appendix "J"). Seat leak testing of this valve requires isolating normal charging and draining a portion of the charging line. This would violate Technical Specification 3.1.2.2 which requires two boration flow paths

Alternate Testing:

This valve will be verified closed during refueling outages while performing Appendix "J" testing. Also, this valve will be exercised open quarterly during routine inservice testing of the charging pumps.

- (1) The NRC Sarety Evaluation Report transmitted by letter, L. E. Kokajko (NRC) to H. B. Ray (SCE) and G. D. Cotton (SDG&E), Safety Evaluation Report of the Inservice Testing (IST) Program for Pumps and Valves, September 24, 1990, Table 1, approved this relief request. See the NRC SER, ¶ 4.4.1.1.
- (2) e current version was subtitted by letter, SCE to NRC, Dock No. 50-361, July 5, 1983.

ENGINEERING PROCEDURE S023-V-3.5
REVISION 7 PAGE 186 OF 208
ATTACHMENT 7
TCN 7-16

VALVE RELIEF REQUEST NO. 15

This VRR was withdrawn by letter, SCE to NKC, Docket Nos. 50-361 and 50-362, Inservice Testing Program for Pumps and Valves, TAC Nos. 55120/1, May 18, 1990. Testing of HVAC system valves 2(3)HV7800, 2(3)HV7801, 2(3)HV7802, 2(3)HV7803, ?(3)HV7805, 2(3)HV7806, 2(3)HV7810 and 2(3)HV7811 "only if a containment purge is not in progress", was not acceptable to the NRC and is an unnecessary restriction on the testing. The purge can be secured if conflicts arise during IST. This NRC recommendation to withdraw was discussed in a telephone conversation with the NRC on December 11, 1989.

ENGINEERING PROCEDURE S023-V-3.5 REVISION 7 ATTACHMENT 7 TCN 7-16

PAGE 187 OF 208

VALVE RELIEF REQUEST NO. 16

System:

All Systems

Components: All Power Operated Valves

Category:

A and B

Class:

1, 2 and 3

Function:

N/A

Test Requirement:

IWV-3413(c): If an increase in stroke time of 25 % or more from the previous test for valves with stroke times greater than 10 sec. or 50 % or more for valves with stroke times less than or equal to 10 sec. is observed, test frequency shall be increased to once each month until corrective action is taken, at which time the original test frequency shall be resumed.

Basis for Relief:

It has been observed through surveillance testing and corrective action that the repeatability of valve stroke times for valves with short stroke times is sporadic and independent of Cogradation.

For valves with rapid stroke time compliance with the stroke time trending and corrective action requirements of the Code is impractical because much of the difference in stroke times from test to test comes from inconsistencies in the operator or timing device. Therefore, compliance with the Code requirements would often result in costly maintenance when no degradation has actually occurred. An alternative acceptable to the NRC staff regarding stroke time measurements for rapid-acting valves is explained in detail in Generic Letter 89-04, Attachment 1, Position 6.

Alternate Testing:

Valves with stroke times of 2 seconds or less are referred to by the NRC as "rapid-acting valves." An increase in stroke time of 50 % or more for a rapid-acting valve (stroke time of 2 seconds or less) shall not result in a test frequency increase to once each month. However, if a valve stroke time does exceed its maximum stroke time value, it shall be declared inoperable.

ENGINEERING PROCEDURE S023-V-3.5
REVISION 7 PAGE 188 OF 208
ATTACHMENT 7
TCN 7-16

VALVE RELIEF REQUEST NO. 16 (Continued)

- (1) This Relief Request has been approved, provided the 2 second definition of "Rapid-Acting Valve" is used. See NRC Safety Evaluation Report transmitted by letter, L. E. Kokajko (NRC) to H. B. Ray (SCE) and G. D. Cotton (SDG&E), Safety Evaluation Report of the Inservice Testing (IST) Program for Pumps and Valves, September 24, 1990, Table 1 and attached TER ¶ 4.1.2.1.
- (2) The cur ent version was submitted by letter, R. M. Rosenblum to NRC, Insp. ice Testing Program for Pumps and Valves TAC Nos. 55120/1, Jul. 1, 1991

ENGINEERING PROCEDURE S023-V-3.5
REVISION 7 PAGE 189 OF 208
ATTACHMENT 7
TCN 7-16

VALVE RELIEF REQUEST NO. 17

This VRR was withdrawn by letter, SCE to NRC, Docket Nos. 50-361 and 50-362, Inservice Testing Program for Pumps and Valves, TAC Nos. 55120/1, May 18, 1990. Testing of the vacuum breaker on the spray additive tanks (Valve 2-159-C-611) is no longer needed since this system has been decommissioned and is not longer in service.

ENGINEERING PROCEDURE S023-V-3.5 REVISION 7 ATTACHMENT 7 TCN _ 7 " 16

PAGE 190 OF 208

VALVE RELIEF REQUEST NO. 18

System:

Main Steam

Components:

Main Steam System Check Valves;

4-003-D-620, Steam Supply - S/G E088 to AFP Turbine K007

Check Valve, and,

4-005-D-620, Steam Supply - S/G E089 to AFP Turbine K007

Check Valve.

ategory: C

Class: 3

Function:

These valves are in the main steam supply to the turbine-driven auxiliary feedwater pump. In the event of a main steam line break, these valves provide reverse flow check to isolate the affected steam generator.

Test Requirement: IWV-3411, exercise the valves every three months.

Basis for Relief:

The AFP steam supply check valves are in the steam supply lines from the main steam system to the inlet of the steam driven AFP turbine trip and throttle valves.

DURING PLANT OPERATION

During normal plant operation, main steam pressure tends to open these valves. No pressure source exists to reverse this pressure in the steam line where these valves are located and allow detection of valve closure or valve leakage. Consequently, with the present system design, verifying the closure of the AFP Steam Supply check valves by leak testing or with reverse flow, while the plant is operating, is not practical. Although a temporary external pressure source could be hooked up to the down stream piping, and apply reverse pressure to these check valves, the required valve lineup would cause the associated auxiliary feedwater pump to be inoperable during the test.

ENGINEERING PROCEDURE SO23-4-3.5 REVISION 7 ATTACHMENT 7

PAGE 191 OF 208

VALVE RELIEF REQUEST NO. 18 (Continued)

Basis for Relief: (Continued)

DURING COLD SHUTDOWN OR REFUELING MODES

Regardless of plant mode, there is no positive means of verifying that the valve disc travels to the closed position. System connections, such as vents and drains (and appropriate line isolation valves) are not present in the system to allow verification that a pressure differential exists across the AFP Steam Supply check valves when they are in the closed position.

CONCLUSION

Testing of these valves could only be accomplished after significant redesign of the system, such as installation of additional isolation valves and appropriate vents and drains in the high pressure steam piping. The high costs of the necessary design changes involved would not be justified by the improvement of the valve testing. Further, the addition of valves, supports and necessary piping modifications could result in reduced plant reliability. NRC Generic Letter 89-04, Attachment 1, Position 2, identifies partial disassembly and inspection as an acceptable alternative for stroking a valve when it is impractical to use flow. In this case, there is no way to test these check valves closed with the existing system design using reverse flow or pressure.

TEST SCHEDULE

Disassembly and inspection of both of these valves each refueling outage requires the associated system piping to be opened up. This is a significant effort requiring substantial manpower and refueling outage time. As a consequence, there is a clear advantage in reducing the number of these tests required in each refueling.

Alternate Testing:

Quarterly, perform a partial stroke test (open) of each valve using system flow. At each refueling outage, test the valves by partial disassembly, inspection and manual stroking on a rotating basis (one valve per refueling).

ENGINEERING PROCEDURE \$023-V-3.5 PEVISION 7 ATTACHMENT 7 TCN 7-16

PAGE 192 OF 208

VALVE RELIEF REQUEST NO. 18 (Continued)

Alternate Testing: (Continued)

During partial disassembly the valve internals will be visually inspected for worn or corroded parts, and the valve disks shall be manually exercised. If it is found that the full stroke capability of the disassembled valve is in question, the other valve will be similarly disassembled and inspected and manually full-stroke exercised during the same outage. Following reassembly and prior to return to service, the valve will be tested by partial stroking using system flow.

We are actively pursuing the use of non-intrusive diagnostic techniques such as acoustics or radiography to demonstrate that these valves close when subjected to reverse flow conditions. If another method is developed to verify the reverse flow closure capability of these check valves, this relief request will be revised or withdrawn.

- (1) This Relief Request has been approved provided we perform a partial stroke test using flow following reassembly of the hand stroked valve and prior to returning it to operable status, See NRC Safety Evaluation Report transmitted by letter, L. E. Kokajko (NRC) to H. B. Ray (SCE) and G. D. Cotton (SDG&E), Safety Evaluation Report of the Inservice Testing (IST) Program for Pumps and Valves, September 24, 1990, Table 1 (and § 4.5.1.1), and NRC Generic Letter 89-04, Position 2.
- (2) The current version was submitted by letter, R. M. Rosenblum to NRC. Inservice Testing Program for Pumps and Valves TAC Nos. 55120/1, July 31, 1931
- (3) NRC approval of the current version, above, was documented in letter, James E. Dyer to H. B. Ray and G. D. Cotton, Safety Evaluation of Licensee Responses to Staff's Technical Evaluation Report Items and Revised Relief Requests to the IST Program for Pumps and Valves, October 2, 1991.

ENGINEERING PROCEDURE S023-V-3.5
REVISION 7 PAGE 193 OF 208
ATTACHMENT 7
TCN 7-16

VALVE RELIEF REQUEST NO. 19

This Relief Request is not necessary. See NRC Safety Evaluation Report transmitted by letter, L. E. Kokajko (NRC) to H. B. Ray (SCE) and G. D. Cotton (SDG&E), Safety Evaluation Report of the Inservice Testing (IST) Program for Pumps and Valves, September 24, 1990, Table 1. Also see NRC SER, ¶ 4.7.1.1. This VRR was withdrawn by The current version was withdrawn by letter, SCE to NRC, Docket No. 50-361 and 50-362. Status of NRC Safety Evaluation Report, Appendix C Items for the Inservice Testing Program for Pumps and Valves, April 12, 1991. An official withdrawn version was transmitted by letter, R.M. Rosenblum to NRC, Inservice Testing Program for Pumps and Valves, TAC No.s 55120/1, June 18, 1991. Testing of HVAC system valves HV9948, HV9950, HV9949 and HV9951 at cold shutdown intervals was explained in the cold shutdown table.

ENGINEERING PROCEDURE S023-V-3.5 REVISION 7 ATTACHMENT 7 TCN 7-16

PAGE 194 OF 208

VALVE RELIEF REQUEST NO. 20

System:

Condensate and Feedwater

Components:

Condensate and Feedwater System Check Valves:

20-036-C-609, Main Feed Check at Steam Generator E089, and, 20-129-C-609, Main Feed Check at Steam Generator E088.

Category:

Class:

Function:

These check valves are in the main feedwater supply to the steam generators. During a loss of feedwater accident, these check valves will close isolating the main feedwater piping from auxiliary feedwater flow.

Test Requirement:

IWV-3411, exercise these valves every three months.

Basis for Relief:

INTRODUCTION

The main feed check valves at the Steam Generators prevent reverse flow from exiting the steam generators in the event of a feed line break between the steam generator feedwater inlet nozzle and the first power operated isolation valve inside containment.

DURING POWER OPERATION

These check valves pass full feedwater flow into each steam generator during power operation. the check valves remain fully open and cannot be closed without disrupting the feedwater flow into the associated steam generator. If the Check valve were closed for test, the resulting reduction of feedwater flow would cause control of the steam generator level to be lost, resulting in a plant trip.

PAGE 195 OF 208

VALVE RELIEF REQUEST NO. 20 (Continued)

Basis for Relief: (Continued)

DURING COLD SHUTDOWN AND REFUELING

Flow is not present during cold shutdown, however, there are no test connections installed in this system to enable leak testing of these valves to verify closure. No instrumentation is installed in this system which could enable closure verification of these valves by measuring reverse differential pressure across the valves nor are these valves equipped with position indication.

CONCLUSION

Compliance with the Code requirements could only be achieved after a significant redesign of the system. The high costs of the necessary design changes involved would not be justified by the improvement of the valve testing. Further, the addition of valves, supports and necessary piping modifications could result in reduced plant reliability. NRC Generic letter 89-04, Attachment ., Position 2, identifies partial disassembly and inspection as an acceptable alternative for stroking a valve when it is impractical to use flow.

TEST SCHEDULE

Because of its effect on the operability of the associated equipment, performing these tests requires considerable manipulation of plant conditions and imposes significant restrictions on the structure of a refueling outage. As a consequence, there is a clear advantage in reducing the number of these tests required in each refueling.

Alternate Testing:

At cold shutdown intervals, perform a full stroke test (open) of each valve using system flow.

At each refueling outage, test the valves by partial disassemply, inspection and manual stroking on a rotating basis (one valve per refueling).

During partial disassembly the valve internals shall be visually inspected for worn or corroded parts, and the valve disk will be manually exercised. If it is found that the full stroke capability of the disassembled valve is in question, the other valve will be similarly disassembled and inspected and manually full stroked during the same outage.

ENGINEERING PROCEDURE S023-V-3.5
REVISION 7 PAGE 196 OF 208
ATTACHMENT 7
TCN 7-16

VALVE RELIEF REQUEST NO. 20 (Continued)

Alternate Testing: (Continued)

Following reassembly and prior to return to service, the valve will be tested by partial stroking using system flow.

We are actively pursuing the use of non-intrusive diagnostic techniques such as acoustics or radiography to demonstrate that these valves close when subjected to reverse flow conditions. If another method is developed to verify the reverse flow closure capability of these check valves, this relief request will be revised or withdrawn.

- (1) This Relief Request has been approved, See NRC Safety Evaluation Report transmitted by letter, L. E. Kokajko (NRC) to H. B. Ray (SCE) and G. D. Cotton (SDG&E), Safety Evaluation Report of the Inservice Testing (IST) Program for Pumps and Valves, September 24, 1930, Table 1 and NRC SER, ¶ 4.6.1. Relief was granted provided we part-stroke exercise the valve to be open position with flow after reassembly.
- (2) The current version was submitted by letter, R. M. Rosenblum to NRC, Inservice Testing Program for Pumps and Valves TAC Nos. 55120/1, July 31, 1991
- (3) NRC approval of the current version, above, was documented in letter, James E. Dyer to H. B. Ray and G. D. Cotton, Safety Evaluation of Licensee Responses to Staff's Technical Evaluation Report Items and Revised Relief Requests to the IST Program for Pumps and Valves, October 2, 1991.

ENGINEERING PROCEDURE S023-V-3.5
REVISION 7 PAGE 197 OF 208
ATTACHMENT 7
TCN 7-16

VALVE RELIEF REQUEST NO. 21

This Relief Request is no longer necessary and this version was withdrawn by letter, SCE to NRC, Docket Nos. 50-361 and 50-362, August 21, 1987. HV-8204 and HV-9949 will be exercised as required by the code. Valve Test Interval Justification moved to Cold Shutdown Tables (Attachments 3 and 5)

ENGINEERING PROCEDURE S023-V-3.5 REVISION 7 ATTACHMENT 7

PAGE 198 OF 208

VALVE RELIEF REQUEST NO. 22

This Relief Request is no longer necessary and this version was withdrawn by letter, SCE to NRC, Docket Nos. 50-361 and 50-362, April 4, 1985. Containment Spray valves 2-054-C-611 and 2-069-C-611 will be exercised open quarterly.

VE RELIEF REQUEST NO. 23

ed Valves

if an increase in stroke time of 25 % or more from est for valves with stroke times greater than 10 nore for valves with stroke times less than or is observed, test frequency shall be increased to until corrective action is taken, at which time t frequency shall be resumed.

the previous test often causes a needless and try into the increased frequency of testing. A sult of low value can often occur immediately tenance in which, for example, the stem is lubritest after a normal 92 day interval, can result ne normal valve stroke time. If the difference of times is more than that allowed <25 % (or < 50 ll be put in the increased frequency of testing ective action. This happens frequently and causes subject of corrective action even when they are erly and normally.

e or average value of valve stroke time for st data versus the previous stroke time is a native to Code requirements. While still being in the Code, a continual increase in valve stroke period could result in significant valve degradatest frequency being increased or corrective en. This is because the test data is compared ious stroke time and each incremental increase in d be less than that specified in Paragraph mparing test results to a reasonably derived n average stroke time, insures that such an not occur, while at the same time eliminating ective action.

lue of stroke time used for comparison of test stablished when the valve is known to be in good ion.

REVISION 7 PAGE 200 OF 208
ATTACHMENT 7
TCN 7 2 6

VALVE RELIEF REQUEST No. 23 (Continued)

Alternate Testing:

Instead of the previous stroke time, use a REFERENCE STROKE TIME.

If an increase in stroke time of 25 % or more from the REFERENCE STROKE TIME for valves with stroke times greater than 10 sec. (or 50 % or more for valves with stroke times less than or equal to 10 sec.) is observed, test frequency shall be increased to once each month until corrective action is taken, at which time the original test frequency shall be resumed.

REFERENCE STROKE TIME is the everage stroke time since the last maintenance that could have affected stroke time (or last three strokes, whichever is greater). The REFERENCE STROKE TIME value if used for comparison of test data shall be established when the valve is known to be in good operating condition.

- (1) The current version was submitted by letter, R. M. Rosenblum to NRC, Inservice Testing Program for Pumps and Valves TAC Nos. 55120/1, July 31, 1991.
- (2) This Relief Request has been approved, NRC Safety Evaluation Report transmitted by letter, L. E. Kokajko (NRC) to H. B. Ray (SCE) and G. D. Cotton (SDG&E), Safety Evaluation Report of the Inservice Testing (IST) Program for Pumps and Valves, September 24, 1990, Table 1. This relief has been granted provided reference values of stroke time are established when the valves are known to be in good operating condition. See NRC SER. ¶ 4.1.3.1.

ENGINEERING PROCEDURE S023-V-3.5 REVISION 7 PAGE 201 OF 208 ATTACHMENT 7 TCN 7-16

VALVE RELIEF REQUEST NO. 24

System: All Systems

Components: All Valves Tosted at Cold Shutdown Intervals

Category:

ATT

Class: 1, 2 and 3

Function:

N. A.

Te Pequirement:

Code section IWV-3412(a) requires that valves that cannot be exercised during plant operation shall be specifically identified by the Owner and shall be full-stroke exercised during cold shutdowns. Full stroke exercising during cold shutdowns for all valves not full-stroke exercised during plant operations s'all be on a frequency determined by the intervals between shutdowns as follows: for intervals of 3 months or longer, exercise during each shutdown; for intervals of less than 3 months, full stroke exercise is not required unless 3 months have passed since "ast shutdown exercise.

Basis for Relief:

If a plant cold shutdown is of such short duration that all of the cold shutdown testing cannot be completed as required, then the plant startup can be delayed for this testing. This has not been required of other plants with approved Inservice Testing Programs.

Requiring completion of all required valve testing prior to plant restart would be a hardship because it could result in costly extensions of cold shutdowns.

Alternate Testing:

Valve testing at cold shutdown shall commence not later than 48 hours after cold shutdown and continue until required testing is completed or plant is ready to return to service. Completion of all required valve testing is not a requisite to plant startup. Valve testing which is not completed during a cold shutdown will be performed during subsequent cold shutdowns starting from the last test performed at the previous cold shutdown, to meet the Code specified testing requirements. No valve need be tested more often that once every 92 days. For planned cold shutdowns where ample time is available exception to the 48 hours may be taken, if testing of all the "Cold Shutdown" valves identified in the IST Program will be completed before return to power operation.

ENGINEERING PROCEDURE S023-V-3.5
REVISION 7 PAGE 202 OF 208
ATTACHMENT 7
TCN 7-16

VALVE RELIEF REQUEST NO. 24 (Continued)

- (1) The current version was submitted by letter, R. M. Rosenblum to NRC. Inservice Testing Program for Pumps and Valves TAC Nos. 55120/1, July 31, 1991.
- (2) This Relief Request has been approved. See NRC Safety Evaluation Report transmitted by letter, L. E. Kokajko (NRC) to H. B. Ray (SCE) and G. D. Cotton (SDG&E), Safety Evaluation Report of the Inservice Testing (IST) Program for Pumps and Valves, September 24, 1990, Table 1 and see SER, ¶ 4.1.1.1

ENGINEERING PROCEDURE S023-V-3.5 REVISION 7 ATTACHMENT / TCN 7-18

PAGE 203 OF 208

VALVE RELIEF REQUEST NO. 25

System:

Main Staam

Components: Atmospheric Dump Valves (ADV's)

2(3)HV8419

2(3)HV8421

Category:

Class:

Function:

Close on Main Steam Isolation Signal (MSIS). Time to close is 19.6 sec. Open remotely and manually. There is no response time associated with opening the ADV in any accident analysis (except for 30 min. operator response time).

Test Requirement:

Full stroke exercise quarterly in accordance with the ASME Code. Section XI, 1WV-3411.

Basis for Relief:

NORMAL SYSTEM LINEUP

The ADV's are rarely opened during power operat on and are only used during plant heat up and cool downs when the condenser is not available. Therefore, the valves are normally in their MSIS actuated position, and there is generally no need to perform a full closed stroke test of the ADV's.

QUARTERLY FULL STROKE

Fully opening an ADV without isolation of the steam flow path at power risks plant upset and trip as this allows a large steam release, approximately 5 % of 3410 MW thermal, and a resultant pressure transient when the ADV is tripped closed. The pressure transient could result in RCS temperature excursions that could cause an Engineered Safety Feature (ESF) initiation with the associated reactor trip.

There is a maintenance block valve upstream of the ADV. This valve could be closed to block steam flow to allow the ADV to be fully opened for test without releasing steam. However, an isolated ADV is unavailable to perform its function with the block valve closed necessitating entry into the action requirements of Technical Specification 3.7.1.6 and aggravating the unavailability of the ADV's from a plant reliability point of view.

ENGINEERING PROCEDURE S023-V-3.5 REVISION 7 ATTACHMENT 7 TCN 7-18

PAGE 204 OF 208

VALVE RELIEF REQUEST NO. 25 (Continued)

Basis for Relief: (Continued)

PARTIAL STROKE TESTING WITH PRESSURE APPLIED

A partial stroke of the ADV can be performed, while the ADV is experiencing full system pressure, by opening the valve to approximately 25 %. The ADV's are designed with integral pilot valves that assist in opening the ADV when it is under pressure. The pilot valve equalizes pressure across the ADV (partially) during the open stroke.

Partial stroke exercising with main steam pressure applied followed by closing the ADV in a similar manner as would a MSIS actuation, demonstrates the ADV and its pilot valve's ability to open and close under actual operating conditions.

CGNCLUSION

This proposed alternative testing method would be analogous to actual design conditions for ADV operation and can be performed with minimal impact to plant operations. The pilot valve stroke length is the first 5 % of the stem travel. This fully exercises the pilot valve and piston ring, and partially exercises ti, main plua.

The pilot valve serves no function when the ADV is not under system pressure. The depressurized stroke test is an artificiality that does not demonstrate the ability of the ADV to function under design conditions.

Alternate Testing:

Perform a partial stroke test of the ADV under actual operating conditions (without isolation of the main steam pressure) on a quarterly basis.

Full stroke the valve on a cold shutdown basis.

- (1) The current version was submitted as a new VRR by letter, R. M. Rosenblum to NRC, Inservice Testing Program for Pumps and Valves TAC Nos. 55120/1, July 31, 1991
- (3) NRC approval of the current version, above, was documented in letter, James E. Dyer to H. B. Ray and G. D. Cotton, Safety Evaluation of Licensee Responses to Staff's Technical Evaluation Report Items and Revised Relief Requests to the IST Program for Pumps and Valves, October 2, 1991.

STROKE TIME ACCEPTANCE CRITERIA FOR VALVES REQUIRED TO STROKE

See Note 3 in Attachment 1 to this procedure. For valves referencing note 3 in Attachments 2 and 4, the maximum stroke times are protected values. These upper ? mits may not be increased without a revision to the Final Safety Analysis and/or the Technical Specifications. This is discussed in Reference 2.3.4. Stroke times in Attachments 2 and 4 without note 3 are not protected and may be changed with the approval of the Cognizant Supervisor (these maximum stroke times are assigned pursuant to Reference 2.4.2, and Reference 2.4.5, Paragraph IWV-3413). To comply with Reference 2.4.2, many valves have IST Program stroke time limits shorter than the required times of the accident analysis. They are as follows:

Valve	Safe Stro	ty Analysis ke Limit	IST Stroke Limit
2(3)HV4712	BTC	40 41.5	36 36
2(3)HV4713	BTC	40 41.5	36 36
2(3)HV4714	BTC BTO	40 41.5	10 10
2(3)HV4715	BTC BTO	33.5 35	10 10
2(3)HV4730	BTC BTO	33.5 35	10 10
2(3)HV4731	BTC BTO	40 41.5	10 10
2(3)HV9205		40	4
2(3)TV9267		40	13
2(3)HV9900		40	14
2(3)HV9920		40	12
2(3)HV9921		40	26
2(3)HV9971		40	13

PAGE 206 OF 208

STROKE TIME ACCEPTANCE CRITERIA FOR VALVES REQUIRED TO STROKE AT OTHER THAN THEIR SAFETY ANALYSIS LIMITS (Continued)

Yalve	Safety Analysis Stroke Limit	IST Stroke Limit
2(3)HV6211	40	15
2(3)HV6216	40	15
2(3)HV6223	40	15
2(3)HV6236	40	15
2(3)HV6500	12	8
2(3)HV6501	12	8
2(3)HV5686	40	33
2(3)HV7258	40	31
2(3)HV7259	40	5
2(3)HV7512	40	17
2(3)HV7513	40	7
2(3)HV5434	40	4 3
2(3)HV5437	40	2
2(3)HV0508	40	33
2(3)HV0509	40	4
2(3)HV0510	40	24
2(3)HV0511	40	5
2(3)HV0512	40	31
2(3)HV0513	40	5
2(3)HV0514	40	31
2(3)HV0515	40	2

TCN 7-16

STROKE TIME ACCEPTANCE CRITERIA FOR VALVES REQUIRED TO STROKE AT OTHER THAN THEIR SAFETY ANALYSIS LIMITS (Continued)

Valve	Safety Analysis Stroke Limit	IST Stroke Limit
2(3)HV0516	40	25
2(3)HV0517	40	29
2(3)HV7911	40	7
2(3)HV9217	40	15
2(3)HV9218	40	5
2(3)HV5388	40	2
2(3)HV9306	40	30
2(3)HV9307	40	30
2(3)HV9322	30	16
2(3)HV9325	30	16
2(3)HV9328	30	16
2(3)HV9331	30	16
2(3)HV9334	40	13
2(3)HV9347	40	32
2(3)HV9348	40	32
2(3)HV4053	20	9
2(3)HV4054	20	9
2(3)HV4057	20	5
2(3)HV4058	20	5
2(3)HV8419	BTC 20	15

ENGINEERING PROCEDURE S023-V-3.5 REVISION 7 ATTACHMENT 8 TCN 7-16

PAGE 208 OF 208

STROKE TIME ACCEPTANCE CRITERIA FOR VALVES REQUIRED TO STROKE AT OTHER THAN THEIR SAFETY ANALYSIS LIMITS (Continued)

<u>Valve</u>	Safety Analysis Stroke Limit	IST Stroke Limit
2(3)HV8421	BTC 20	15
2(3)HV5803	40	18
2(3)HV5804	40	5

These differing stroke times reflect the methodology used to establish stroke times for the power operated valves in Units 2 and 3. It also reflects the absolute limits on stroke times versus the IST Program limits developed in accordance with NRC Generic Letter 89-04.